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The results of an effort to develop a body of internally consistent economic data which facilitate comparison of the population, housing, employment, and income characteristics of 56 Standard Metropolitan Statistical Areas with a population of over 500,000 are reported in this publication. Part of a continuing research program on local government finances, the report was designed to fill some important gaps and provide the basis for future research efforts in this area. Development of a consistent data system required selection of a manageable number of the most relevant areas from among the current total of 231 Standard Metropolitan Statistical Areas, and adaptation of an extensive system of basic data for each of these by means of classification and coverage which permit internal comparison and, at the same time, provide historic continuity. The data include information, sometimes as current as 1967, covering the general topics: (1) location and types of major metropolitan areas, (2) population, (3) land, (4) population densities and housing, (5) employment size, composition, and trends, and (6) income and wages. Detailed information by area is given in 13 statistical tables, permitting easy comparison on any factor between the various urbanized areas. (ET)

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Economic Dimensions of Major Metropolitan Areas

Population, Housing, Employment and Income

TECHNICAL PAPER NUMBER 18

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Economic Dimensions of Major Metropolitan Areas,

Population, Housing, Employment and Income.

2 BY JUAN DE TORRES.

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Introduction

AMONG THE MANY thousands of local government units, the major urban centers have been confronted with particularly severe economic and financial difficulties. If anything, the underlying causes for many of these difficulties appear to have intensified in recent years. This lends special urgency to research on urban problems; yet economic research in this area is handicapped by serious data problems. Much statistical information is cast in a form which makes it difficult to carry out incisive comparisons among similarly situated urban communities for a particular period of time, or even for a given community over longer time spans. Therefore, the development of a body of internally consistent economic data is a basic prerequisite for meaningful quantitative economic analysis on urban problems. The data presented in this report are the result of one such effort.

The special problems confronting the major urban centers are the outgrowth of complex demographic, social, and economic developments connected, in part, with urbanization and "suburbanization." These factors are by no means new; they have extended over many decades. But they have intensified during the postwar years in general, and during the most recent past in particular. Among the more important demographic-economic factors has been the exodus to the suburbs of professional and managerial groups with above-average incomes, and the simultaneous influx of minority groups and newcomers from rural areas and from abroad with below-average skills, education, and incomes. These population shifts have added upward pressures on urban expenditures for education and welfare even where the population "in residence" has remained stable (or – as in a few extreme cases – has declined). At the same time, the growth in the income and tax bases of the large cities has been restrained by these demographic shifts, as well as by the deterioration of housing and the decay of the older downtown centers – often a by-product of such shifts.

Some of the large cities that have attempted to cope with these problems by means of restructuring their tax and revenue systems, have been stymied by the lack of support from state legislatures – often dominated by the representatives of the smaller towns, suburbs, and rural communities – which must approve such changes. Hence, the mayors of most of the large cities have turned increasingly to Washington for support and assistance.

This is but a brief review of some of the more difficult economic problems encountered by our large urban centers; yet it helps to explain why these urban centers deserve high priority for problem-oriented economic research.[1] By now an extensive body of relevant statistical information designed to support well-focused economic analysis in this area should have been developed. Instead, the analyst is still confronted with a multiplicity of data sources which vary in regard to method of selection and coverage; moreover, frequent revisions in coverage – even over relatively short time spans – have almost become the rule.[2] There are few cases where meaningful and consistent historical series can be extracted directly – and without further adjustments – from a standard source. This problem is aggravated by several important revisions in the Census classification of the so-called Standard Metropolitan Statistical Areas (SMSA's). These revisions (especially those of 1959 and 1964) have successively enlarged the area covered by many SMSA's by adding adjacent counties which had previously been excluded. Therefore, none of the Census data collected by SMSA classification provide information on a consistent historical basis.

One approach of developing a consistent data system for major urban areas would require the following two steps:

(1) Selection of a manageable number of the most relevant SMSA's from among the current total of 231 SMSA's (which includes giant-size as well as pint-size

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[1] For a more extensive review of these problems, see Michael E. Levy, "Trends and Prospects of Local Government Finances," *The Conference Board Record,* October 1966; and Juan de Torres, *Financing Local Government,* SBE 96.

[2] The multiplicity of data sources and variation in coverage is apparent from Table A, on pages 2 and 3 of this report; the revisions of coverage over time are briefly discussed in this introduction.

SMSA's and is far too comprehensive to be usable).[3]

(2) Adaptation of an extensive system of basic data for each of these SMSA's by means of classification and coverage which permit internal comparison among SMSA's and, at the same time, provide historic continuity.[4]

The present report utilizes this two-step approach in an attempt to develop a limited data system for population, housing, employment, and income of SMSA's with a population of over 500,000. At present, there are 64 such SMSA's; as a group, they contain all the major core cities of this country, over half of its total population, and about three-quarters of its *urban* population. Eight SMSA's had to be excluded from the data system presented here, mainly because recent population data were not available for them. Of the remaining 56 SMSA's covered in this report, several contiguous SMSA's were consolidated into seven larger, but economically more meaningful, Standard Consolidated Areas (SCA's). Thus, essential information on population, housing, employment, and income is presented here in 13 tables for each of 48 individual SMSA's or SCA's, as the case may be. In 10 of these 13 tables, where this was feasible, the data were reclassified so as to reflect consistently the SMSA definition adopted by the U. S. Bureau of the Census in 1964.[5] A careful review of these tables reveals serious gaps that exist even in regard to the most basic information required for the analysis of urban problems.[6]

One additional research problem stems from the fact that many of the more readily available statistics often reflect historical developments and political boundaries of local governments, rather than economically meaningful information. Sometimes, data that are more directly related to meaningful economic concepts can be extracted from some of the less commonly used sources; in other cases, such information must be derived by means of more complex "data adjustments," or even by inference and "proxy."[7] This report, by stressing mainly those data and concepts that are economically the more meaningful ones, is likely to increase the awareness to this problem.

The present report – part of the continuing research program on local government finances by the Board's Fiscal and Monetary Department – was designed to fill some important gaps and provide the basis for future research efforts in this area. In making this report available to the public, The Conference Board hopes to facilitate wider use and further exploration by the many Conference Board Associates, government agencies, and scholars who are deeply concerned with the rapidly growing urban problems.

Michael E. Levy, Manager
Fiscal and Monetary Department

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[3] "Relevance" may, of course, vary with the problems under consideration; for some of the most pressing current economic problems, it is closely related to "size."

[4] This requires the reclassification of data on a county-by-county basis, so as to apply the SMSA coverage of one specific Census definition to the entire time period covered by the data.

[5] In Tables 7, 8, and 13, the coverage is at slight variance with this definition, but further adjustments were not feasible.

[6] In this connection, the sparse and poorly focused data on employment and income of the major SMSA's are noteworthy.

[7] Good examples are the separation of the "core" from the "suburbs" and "exurbs," and the emphasis on "urbanized" area – in comparison with total land area (Tables 3 and 4).

I. Data and Coverage

CENSUS-TAKING is a long and complicated process and requires considerable preparation. Preparation for the 1970 population and housing censuses are undertaken two to three years before the actual counting takes place.[1] The bulk of Federal agency statistics on *Standard Metropolitan Statistical Areas* (SMSA's) currently used derive from the 1950 and the 1960 Census of Housing and Census of Population, a somewhat lesser amount from the quinquennial Censuses of Business and Manufactures; supplementary information is released by the Bureau of the Census in other publications, by the Public Health Service, the Bureau of Employment Security, the Bureau of Labor Statistics, the Bureau of Public Roads, the Business and Defense Services Administration, the Federal Reserve Board, the Federal Deposit Insurance Corporation, the Home Loan Bank Board, the Internal Revenue Service, and most recently, by the Office of Business Economics.

The Bureau of the Budget is in charge of defining the SMSA, the basic unit for which data are collected; but it does not determine for which of the SMSA's (there are currently 231) specific statistical information will be collected. Since it is not practical, and is too expensive, to collect data for 231 SMSA's and for the nearly 500 counties of which they are composed, each agency has to use its judgment in the selection of SMSA's to be covered. The Bureau of the Census, for example, has elected to gather different statistics in different SMSA's in the course of its Population and Housing Censuses of 1960, in an attempt to provide a maximum of useful information with the available budget. The resulting pattern of data collection on SMSA's is outlined in Table A. The problems for economic analysis inherent in this pattern are obvious. At this point, it is not clear whether a greater attempt at standardization will be made in the 1970 Census.

To many experienced observers, the present minimum size for SMSA's (60,000-70,000) is too small and produces too many SMSA's from the point of view of economic analysis and planning. This minimum-size criterion was adopted before World War II, and has remained unchanged ever since. Prior to World War II, town planners were fairly optimistic as to the viability of small, self-sustaining towns of 50,000 to 100,000 population. (Town planners favor small towns because of the limited capacity of the construction industry.[2] If a new and very large city were planned, it might take forty to fifty years to construct it from the ground up; such a long time-horizon would make town planning rather hazardous.)

Prior to World War II, when little experience in town planning had been gained, the minimum size of 50,000 to 100,000 population was not seriously challenged. The postwar years, however, produced a great deal of experience in town planning, particularly in Europe, where war destruction required extensive rebuilding. The British, in particular, launched a policy of housing their growing population in "new towns" which were originally planned for a population of 50,000. It is generally conceded now that these new towns, as originally planned, were too small to be self-sufficient. A city of less than 150,000 does not provide a sufficient number of school graduates every year to make up a diversified work force. Labor shortages will appear in particular trades or skills so that some firms may have to recruit outside the city. And with less than 250,000 inhabitants, a city seems unable to develop those services and businesses which form a part of what has come to be known as the the central business district (CBD). Smaller towns usually have to rely on the central business district of a larger adjacent city.[3]

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[1] A crucial step, the delineation of enumerator districts (ED's), commences about two years before the actual count. See U. S. Bureau of the Census, *Censuses of Population and Housing, Procedural History*, U. S. Government Printing Office, Washington, D. C., 1966, p. 311.

[2] Levittown, Pa. had 17,000 homes built between 1952 and 1958, or about 3,000 per year, and it is generally taken as indicative of efficient, full-capacity construction. At this rate, a city of 60,000 could be built in five years but one of 300,000 would require twenty-five years, which is a long time-horizon.

[3] See Ministry of Housing and Local Government, *The South East Study, 1961-1981*, Her Majesty's Stationery Office, London, 1964, pp. 56-75.

Table A:
Federal Agency Data on SMSA's*

Type of Data	Source	Number or Size of SMSA's for Which Data are Available
Motion picture production; quinquennial	Business Census, 1963	3
All retail sales; annual	Bureau of the Census, *Current Retail Trade Reports*	7
Housing inventory: changes since last census and characteristics; decennial	Housing Census, 1960	17
Consumer Price Index; selected retail prices; annual and monthly	Bureau of Labor Statistics, *Consumer Price Index*	5-23
Residential and nonresidential construction; annual	Business and Defense Services Administration, *Construction Review*	22
Inside central city and outside central city; children ever born (fertility), place of birth, mobility status, years of school completed, employed persons, occupation of the employed, family income; decennial	Population Census, 1960	24
Chronic illness, acute conditions, injuries, impairments, visits to dentists and physicians; irregular (July 1963-June 1965)	Public Health Service, *Health Characteristics by Place of Residence*	All million-plus SMSA's
Government expenditures, revenues, taxes, debt; annual	Bureau of the Census, *Local Finances in Selected Metropolitan Areas*	38
Population; annual	Bureau of the Census, *Current Population Reports, P-25*	55
Persons in hospitals and other institutions; decennial	Population Census, 1960	All 500,000-plus SMSA's
Inside central city and outside; housing units authorized; annual	Bureau of the Census, *Construction Reports, C-42*	62 selected
Insured banks; annual	Federal Deposit Insurance Corp., *Assets, Liabilities, and Capital Accounts, Commercial and Mutual Savings Banks*	53-65
Selected service establishment (e.g., hotels, bowling); quinquennial	Business Census, 1963	12-75
Wholesale establishments and sales; quinquennial	Business Census, 1963	77
Residential construction; annual	Bureau of the Census, *Construction Reports, C-42*	99
Individual incomes and income taxes; biennial	Internal Revenue Service	100
Savings and loan associations; annual	Federal Home Loan Bank Board	40-121
Labor turnover; monthly	Bureau of Labor Statistics, *Employment and Earnings*	129
Retail stores, number, sales size, payroll, central business districts, major retail centers; quinquennial	Business Census, 1963	116-130

Table A: (continued)
Federal Agency Data on SMSA's*

Type of Data	Source	Number or size of SMSA's for which data are available
Unemployment; monthly	Bureau of Labor Statistics, *Employment and Earnings*	150 major labor areas
Earnings data; annual	Bureau of Labor Statistics, *Various Publications*	12 154
Earnings of workers by place of work and residence, means of transportation; decennial	Population Census, 1960	All 250,000-plus SMSA's
Family composition, native and foreign stock, mobility status, years of school completed, employment, occupation of the employed, industry in which employed, hours of works, income by selected characteristics; decennial	Population Census, 1960	All 250,000-plus SMSA's
Plant location in manufacturing, payroll, production workers, value added, new capital expenditures; annual	Bureau of the Census, *Annual Survey of Manufactures*	SMSA's with 40,000-plus manufacturing employees
Age of population by race, employment by occupation and industry group; decennial	Population Census, 1960	All 100,000-plus SMSA's
Selected characteristics of housing and occupants; decennial	Housing Census, 1960	All 100,000-plus SMSA's
Population, natural increase, migration; annual	Bureau of the Census, *Current Population Reports, P-25*	All
Births, deaths; annual	Public Health Service, *Vital Statistics*	All
Land area, population, age, race, sex, school enrollment, place of work and residence, weeks worked employment status, unemployment, income; decennial	Population Census, 1960	All
General characteristics of housing and occupants; decennial	Housing Census, 1960	All
Finances of local governments; quinquennial	Census of Governments, 1962	All
State highway expenditures in SMSA's, local roads, city streets; annual	Bureau of Public Roads, *Highway Statistics*	All
Retail trade: sales, personnel; Selected services: receipts, personnel, establishments, employment size; Wholesale trade: establishments, sales, quinquennial	Business Census, 1963	All
Manufacturing: employment, value added, new capital expenditures by 2- and 3-digit industry code; quinquennial	Census of Manufactures, 1963	All

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*According to the Bureau of the Budget definition, an SMSA is a central city or cities of at least 50,000 population plus the counties "integrated" with the cities. The criteria of integration are based largely on commuting patterns.

Accordingly, some present European planning proceeds on the basis of "city blocks" of 250,000;[4] since European industry tends to be smaller-scale than U. S. industry, the appropriate minimum size for the United States may well be larger than 250,000 inhabitants.

In the light of this knowledge, one may question the usefulness of collecting detailed data for a total of 231 SMSA's, 111 of which have populations of less than 250,000. Thus, the most comprehensive SMSA grouping for which detailed data are collected could probably be limited to the class of 120 SMSA's with a population of 250,000 or more. This grouping has already been used in many cases by the Population Census; the 1963 Business Census, in turn, identified a total of 116 central business districts in the largest SMSA's (consistent with the European experience that a city with less than 250,000 inhabitants does not develop a central business district). Other statistics are collected for groups of approximately 120 SMSA's. The uniform adoption of SMSA's with a population of 250,000 or more would improve over-all comparability and would eliminate the unnecessary and costly collection of details for 111 smaller SMSA's.

A second grouping of special interest might consist of SMSA's with a population of 500,000 or more. In 1960, 59 SMSA's fell into this class; by 1965, there were 64. Again, groups of this approximate size are currently the basis of a body of detailed statistical information, such as the separate breakdown of statistics on *housing units authorized* (into authorizations for units within and for units outside the central city) which gives data for 62 selected "large" SMSA's out of the 99 covered by the statistics on housing units authorized.

Finally, much additional statistical detail is available for SMSA's with a population of at least 1,000,000. This round number presents, of course, an inducement to make a division at this figure. Whether it corresponds to urban realities is another question. The present study finds that a more significant division can be made at the level of Minneapolis-St. Paul (population of 1,600,000, in 1965). In 1960, there were 24 SMSA's with a population of more than 1,000,000; by 1965, this number had increased to 30. The Census of Population of 1960 presented many breakdowns (between the main body of the central city and its outside surroundings) only for the 24 SMSA's with more than 1,000,000 inhabitants. The Public Health Service, in turn, for its study of the health characteristics of SMSA's, covered only SMSA's with a population of more than 1,000,000.

For the present study, 56 SMSA's, for which population estimates were available, were selected from the 64 SMSA's with a population of more than 500,000. This choice was governed by the desire to present many statistical series on a per capita basis – the most meaningful basis in many contexts. Eight SMSA's with a population of more than 500,000 had to be excluded because estimates of their population on July 1, 1964, were lacking. The study of the remaining areas covers 92 million inhabitants, just about one half of the U. S. population as of July, 1965, and nearly three quarters of the total "urban" population living in SMSA's (as defined by the Bureau of the Budget in 1964). Only a very small fraction of the population in SMSA's with a population of more than 500,000 is excluded.[5]

In five cases where several SMSA's are contiguous, these have been aggregated to form five *Standard Consolidated Areas* (SCA's); thus, the statistical tables in Section IV contain data for 56 SMSA's grouped into 48 large urban units – either SMSA's or SCA's, as the case may be, each with a population of more than 500,000. All 48 units are listed and identified individually in the tables and all data have been adjusted for maximum *internal* and *external* comparability. Only 46 major metropolitan areas are presented in the text. Two of the 48 are so atypical that they obscure the analysis. These two are San Bernardino-Riverside, California, composed of two enormous counties, and Honolulu, which is outside the continental United States.

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[4] See Hans J. Blumenfeld, "A Hundred Year Plan: The Example of Copenhagen," *Ekistics*, February, 1964, pp. 75-81.

[5] The following SMSA's with a population of more than 500,000 in 1965 are not dealt with in this study: New Haven, Connecticut; Worcester, Massachusetts; Springfield, Massachusetts; Salt Lake City, Utah; Omaha, Nebraska; Allentown-Bethlehem, Pennsylvania; Nashville, Tennessee; Grand Rapids, Michigan. These eight SMSA's had a total population in 1965 of 4,400,000 or somewhat under 5% of the total population in SMSA's of more than 500,000 inhabitants. Furthermore, there are three other SMSA's that are likely to pass the 500,000 mark in the five years between 1965 and 1970. Those are Jacksonville, Florida; Richmond, Virginia; and Fort Lauderdale-Hollywood, Florida. It is very unlikely that any other SMSA will pass the 500,000 mark by 1970.

II. Population and Housing

THIS SECTION is arranged according to the following scheme: The first part describes the location and types of major metropolitan areas presented in the study. Its purpose is to fix as firmly as possible in the mind's eye the 46 major metropolitan areas analyzed in the text. The second part is a discussion of their population, the third, of their land area, the fourth and final part, of population densities and residential densities, i.e., of how population and land area are related.

1. LOCATION AND TYPES OF THE MAJOR METROPOLITAN AREAS

One of the problems in presenting data on the urban economy of the United States is the large number of major centers it contains. For most other nations in the world the description of 10 to 20 major urban centers and their interrelation would suffice to broadly describe the urban economy. In the United States – even when attention is limited to metropolitan areas with a population of more than 500,000 – there are 64 major metropolitan areas to be considered. Of these, 56 are covered here, some of them consolidated into statistical consolidated areas (SCA), providing the 48 separate observations shown in the 13 basic statistical tables of this study.

a. Location of Major Metropolitan Areas

The location of major metropolitan areas is indicated in Map 1. The regions shown in the map – Northeast, North Central, South, and West – are adopted from the U.S. Bureau of the Census. These geographic regions, and even more so the political boundaries of the states, are often bad guides to economic regions. Map 2 presents a picture of the manufacturing belt and megalopolis, two areas keyed more to economic than to political boundaries. The region termed "megalopolis" (following the treatment by Jean Gottman) includes most of the old manufacturing belt with the addition of Washington, D. C.[1] The Midwest, strictly speaking, starts at Pittsburgh and Buffalo. These are definitely integrated in the steel and manufacturing complex that stretches from Pittsburgh to and around Lake Erie and whose boundaries run from Pittsburgh to Buffalo to Toronto in Canada and then to Detroit. The South, with 14 major metropolitan areas, is probably the most heterogeneous region. It contains Louisville, which is oriented towards Chicago, and Baltimore and Washington, which are in "Megalopolis." It also includes four major metropolitan areas in the Southwest with distinctive characteristics of their own, Oklahoma City, Dallas-Fort Worth, Houston, and San Antonio.

b. Types of Major Metropolitan Areas

Before World War II the economic geography of the United States showed clear-cut economic patterns. Earlier in the century, when roughly half of the population was employed in the resource-oriented industries – agriculture, forestry, and mining – transportation hubs sprang up to serve the areas where these materials were produced. Because manufacturers in many lines of production need a location where raw materials can be assembled cheaply and conveniently and where costs of shipping finished products to markets is minimized, manufactures were established at these transportation hubs.[2] As these older centers grew, they developed conditions – often referred to as "external economies" – that were favorable to the further expansion of manufacturing. Among these were a skilled labor force, established channels for moving materials and finished products in and

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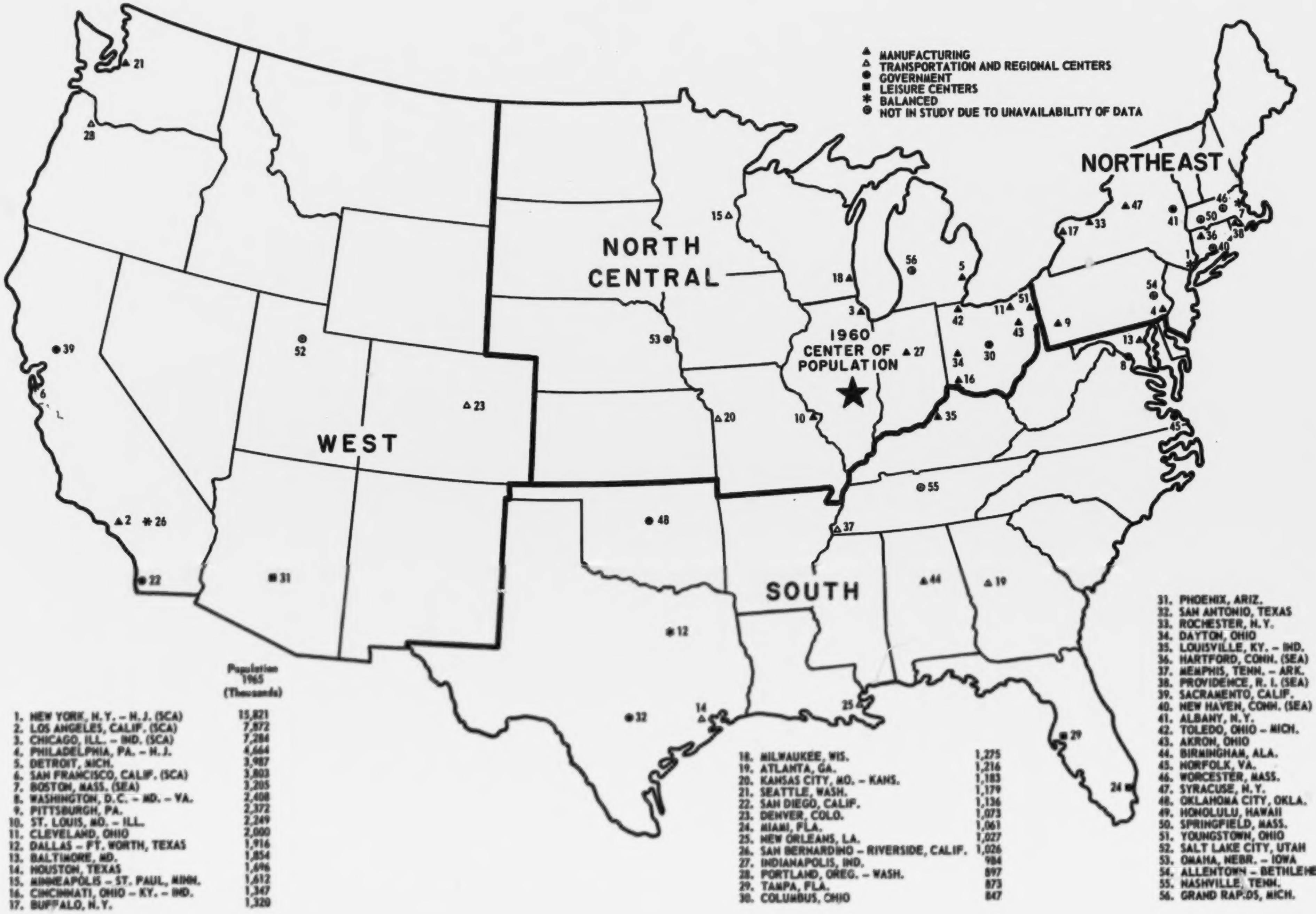
[1] The name "Megalopolis" has created some confusion. This is a definite region, and not a city. There are well-defined commuting patterns to its seven centers (see Jean Gottman, *Megalopolis*, Twentieth Century Fund, New York, 1961).

[2] For a classification of manufactures with respect to the importance of locational factors, see Robert Lichtenberg, *One Tenth of a Nation*, Harvard University Press, Cambridge, Massachusetts, 1961.

Map 1: Major Metropolitan Areas[1] in the United States, 1965

[1] A major metropolitan area is a metropolitan area with a population of more than 500,000

Source: U. S. Bureau of the Census


▲ MANUFACTURING
△ TRANSPORTATION AND REGIONAL CENTERS
● GOVERNMENT
■ LEISURE CENTERS
✱ BALANCED
◉ NOT IN STUDY DUE TO UNAVAILABILITY OF DATA
NORTHEAST
NORTH CENTRAL
WEST
SOUTH
1960 CENTER OF POPULATION
21
28
39
6
2
26
22
52
31
23
15
53
20
18
3
10
56
5
27
42
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36
38
40
1
54
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8
45
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37
48
12
32
14
25
44
19
29
24

	Population 1965 (Thousands)
1. NEW YORK, N.Y. – N.J. (SCA)	15,821
2. LOS ANGELES, CALIF. (SCA)	7,872
3. CHICAGO, ILL. – IND. (SCA)	7,284
4. PHILADELPHIA, PA. – N.J.	4,664
5. DETROIT, MICH.	3,987
6. SAN FRANCISCO, CALIF. (SCA)	3,803
7. BOSTON, MASS. (SEA)	3,205
8. WASHINGTON, D.C. – MD. – VA.	2,408
9. PITTSBURGH, PA.	2,372
10. ST. LOUIS, MO. – ILL.	2,249
11. CLEVELAND, OHIO	2,000
12. DALLAS – FT. WORTH, TEXAS	1,916
13. BALTIMORE, MD.	1,854
14. HOUSTON, TEXAS	1,696
15. MINNEAPOLIS – ST. PAUL, MINN.	1,612
16. CINCINNATI, OHIO – KY. – IND.	1,347
17. BUFFALO, N.Y.	1,320
18. MILWAUKEE, WIS.	1,275
19. ATLANTA, GA.	1,216
20. KANSAS CITY, MO. – KANS.	1,183
21. SEATTLE, WASH.	1,179
22. SAN DIEGO, CALIF.	1,136
23. DENVER, COLO.	1,073
24. MIAMI, FLA.	1,061
25. NEW ORLEANS, LA.	1,027
26. SAN BERNARDINO – RIVERSIDE, CALIF.	1,026
27. INDIANAPOLIS, IND.	984
28. PORTLAND, OREG. – WASH.	897
29. TAMPA, FLA.	873
30. COLUMBUS, OHIO	847
31. PHOENIX, ARIZ.	818
32. SAN ANTONIO, TEXAS	808
33. ROCHESTER, N.Y.	804
34. DAYTON, OHIO	791
35. LOUISVILLE, KY. – IND.	771
36. HARTFORD, CONN. (SEA)	765
37. MEMPHIS, TENN. – ARK.	740
38. PROVIDENCE, R. I. (SEA)	739
39. SACRAMENTO, CALIF.	737
40. NEW HAVEN, CONN. (SEA)	704
41. ALBANY, N.Y.	697
42. TOLEDO, OHIO – MICH.	657
43. AKRON, OHIO	650
44. BIRMINGHAM, ALA.	644
45. NORFOLK, VA.	637
46. WORCESTER, MASS.	608
47. SYRACUSE, N.Y.	606
48. OKLAHOMA CITY, OKLA.	585
49. HONOLULU, HAWAII	571
50. SPRINGFIELD, MASS.	550
51. YOUNGSTOWN, OHIO	523
52. SALT LAKE CITY, UTAH	523
53. OMAHA, NEBR. – IOWA	516
54. ALLENTOWN – BETHLEHEM, PA. – N.J.	515
55. NASHVILLE, TENN.	512
56. GRAND RAPIDS, MICH.	502

out of the plant, ready access to financing, innovations in industrial processes, and scientific know-how. These external economies were largely responsible for the development of the manufacturing belt, a stretch of land reaching from Milwaukee and St. Louis in the West to Boston and Baltimore on the East Coast (see Map 2). The manufacturing belt may be sub-divided into the Midwest and the old manufacturing belt; manufacturing in the former was more strategically located with respect to raw materials and markets, whereas the latter (all metropolitan areas east of a line drawn from Buffalo to Washington) depended more on external economies.

Prior to World War II, a substantial departure from this pattern could be found mainly in the Florida land boom of the Twenties and in the growth of Washington, D.C. in the Thirties. But since World War II, the growth of government and the increase in per capita income have produced eleven major metropolitan areas whose large size cannot be attributed to transportation or manufacturing. Among these the following eight are governmental centers (listed in order of size):

(1) Washington, D.C.
(2) San Diego, Calif.
(3) San Antonio, Texas
(4) Sacramento, Calif.
(5) Albany, N. Y.
(6) Norfolk, Va.
(7) Columbus, Ohio
(8) Oklahoma City, Okla.

San Diego, San Antonio, Norfolk, and Oklahoma City have a large number of military personnel and much military business. Sacramento, Albany, and Columbus are the capitals of three large states. Their presence among major metropolitan areas underlines the growing importance of state government as an economic force. Albany and Columbus have some important manufactures but Sacramento has hardly any manufacturing.

There are three major metropolitan areas whose large size reflects the growing ability of Americans to spend their money away from the places where they earn it. By making their communities attractive places in which to spend leisure time, these areas have grown to be major metropolitan areas. They are (in order of size):

(1) Miami, Fla.
(2) Phoenix, Ariz.
(3) Tampa, Fla.

Nevertheless, manufacturing continues to be the chief "city-builder" in the United States, though diminished in importance. Twenty-three major metropolitan areas are chiefly manufacturing centers. They are listed in the order of the importance of manufacturing to their economies, as follows:

(1) Youngstown, Ohio
(2) Rochester, N. Y.
(3) Dayton, Ohio
(4) Akron, Ohio
(5) Detroit, Mich.
(6) Hartford, Conn.
(7) Milwaukee, Wis.
(8) Buffalo, N. Y.
(9) Providence, R. I.
(10) Cleveland, Ohio
(11) Toledo, Ohio
(12) Pittsburgh, Pa.
(13) Cincinnati, Ohio
(14) Chicago, Ill.
(15) Louisville, Ky.
(16) Philadelphia, Pa.
(17) St. Louis, Mo.
(18) Indianapolis, Ind.
(19) Syracuse, N. Y.
(20) Seattle, Wash.
(21) Baltimore, Md.
(22) Los Angeles, Calif.
(23) Birmingham, Ala.

Twenty of these areas are in the manufacturing belt, but two (Los Angeles and Seattle) have emerged on the West Coast. Among the old transportation centers, some have lost their strategic importance (e.g., Rochester and Providence); in others the relative importance of the transportation function has come to be overshadowed by manufacturing (e.g., St. Louis and Chicago).

The difference between a manufacturing center and a regional or transportation center is often one of degree. The regional or transportation center usually lacks some of the "external economies" associated with a high degree of manufacturing; its manufacturing is mostly oriented towards regional resources (such as cattle in Kansas City and lumber in Portland). In addition, it tends to specialize in distributing the products of the manufacturing centers over an extensive wholesaling territory. There are eight major metropolitan areas that are either regional capitals or transportation centers. They have a high proportion of employment in transportation, wholesaling, and retailing, and sometimes also a fair proportion in finance and banking. In order of size, they are:

(1) Houston, Texas
(2) Minneapolis-St. Paul, Minn.
(3) Atlanta, Ga.
(4) Kansas City, Mo.
(5) Denver, Colo.
(6) New Orleans, La.
(7) Portland, Ore.
(8) Memphis, Tenn.

Finally, there are four major metropolitan areas which are hard to classify in any particular category. New York may be considered the typical example of a "balanced" metropolitan area.[3] San Francisco, in turn, is a rather original mixture of transportation, government, tourism,

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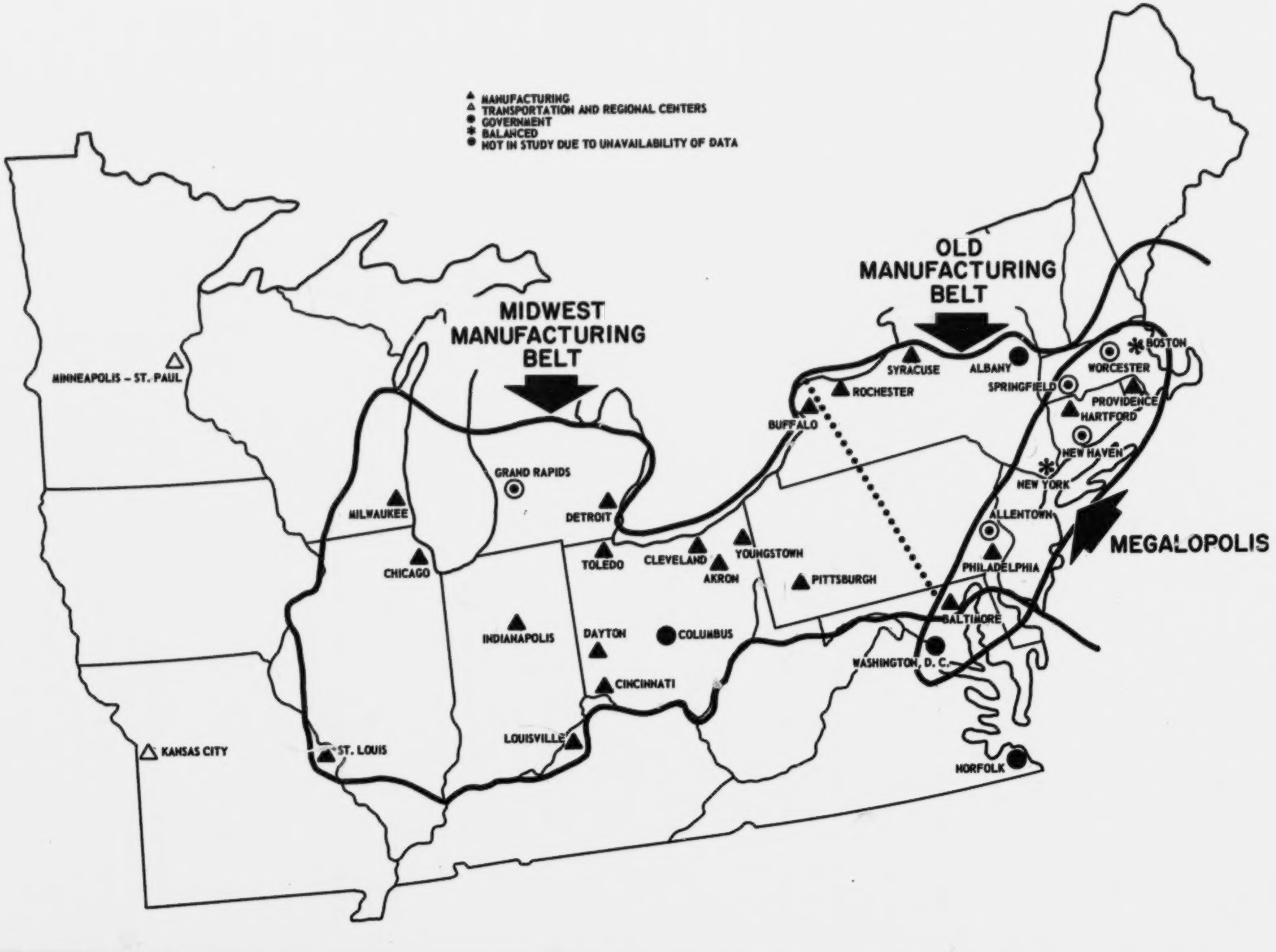
[3] New York has been used as the model for distinguishing manufacturing centers from regional capitals and transportation centers. Any major metropolitan area with a higher percentage of manufacturing employment than New York is classified here as a manufacturing center.

Map 2: The Manufacturing Belt and Megalopolis, 1965

Sources: U. S. Bureau of the Census, The Conference Board


▲ MANUFACTURING
△ TRANSPORTATION AND REGIONAL CENTERS
● GOVERNMENT
✱ BALANCED
⊙ NOT IN STUDY DUE TO UNAVAILABILITY OF DATA
MIDWEST MANUFACTURING BELT
OLD MANUFACTURING BELT
MEGALOPOLIS
MINNEAPOLIS – ST. PAUL
KANSAS CITY
MILWAUKEE
CHICAGO
GRAND RAPIDS
DETROIT
TOLEDO
CLEVELAND
AKRON
YOUNGSTOWN
PITTSBURGH
INDIANAPOLIS
DAYTON
COLUMBUS
CINCINNATI
LOUISVILLE
ST. LOUIS
BUFFALO
ROCHESTER
SYRACUSE
ALBANY
SPRINGFIELD
WORCESTER
BOSTON
PROVIDENCE
HARTFORD
NEW HAVEN
NEW YORK
ALLENTOWN
PHILADELPHIA
BALTIMORE
WASHINGTON, D. C.
NORFOLK

finance, and some manufacturing (especially food processing). Dallas-Fort Worth represents another unusual combination of financial center, regional capital, and manufacturing center (airplanes and oil machinery). Boston is the unique example in the United States of a manufacturing center which over the last 30 to 40 years has had such small growth in manufacturing employment that it now presents a "balanced" range of economic activities.

2. POPULATION

Perhaps the single most significant figure for the study of metropolitan areas is population. Nevertheless, reliable population data have not been readily available until very recently. In 1965 annual population estimates were made available for the largest SMSA's; in 1967 the U.S. Bureau of the Census expanded the program to cover all SMSA's. Previously, only the decennial data derived from the population census had been available. The estimates are based on data on residential construction and school enrollment.[4] In the 13 major statistical tables of this study, metropolitan areas are ranked according to their 1965 population.

a. Population Size

The largest metropolitan area, New York, has a population 30 times larger than that of Youngstown, the smallest metropolitan area included in this study. Four broad classes can be distinguished within this size range. The first consists of the three largest SCA's – New York, Los Angeles, and Chicago – which, in 1965, contained a population of 30,977,000, or about 16% of the total U.S. population. These three SCA's seem to have a special importance somewhat similar to that of the national capital in smaller countries (e.g., Paris or London). New York and Chicago have been the two main transportation hubs of the United States; the port of New York and the railroad yards of Chicago are each the largest in their class, though their *relative* importance has declined somewhat over the years. Los Angeles, though not unimportant in transportation, has not held the unique position of the other two centers.

The second class consists of the following four metropolitan areas large enough in size to display some of the characteristics of the three largest SCA's: Philadelphia, Detroit, San Francisco, and Boston. Such specialties as art institutes, museums, tourism, investment banking, and national advertising have been developed with some degree of success in these four metropolitan areas, and especially in San Francisco which in many respects rivals Los Angeles on the West Coast. (Among the four, Detroit seems to have lagged in the development of these specialties.)[5]

The third class contains eight metropolitan areas which have the *potential* for developing these highly specialized urban activities.[6] This potential depends on many factors. Probably one of the more important is the metropolitan area's distance from the other 14 largest urban centers. Minneapolis-St. Paul, the metropolitan area with the lowest population in these three classes (1,612,000), is quite distant from all other large population centers. Pittsburgh, St. Louis, Cleveland, Dallas-Fort Worth, and Houston are favored in varying degrees. Baltimore, sandwiched between Philadelphia and Washington, is in the least favorable position. But special factors can also be of importance. Washington, D.C. benefits from the special factor of being the nation's capital.

In 1965, the fifteen metropolitan areas in the first three classes contained 32.4% of the population of the United States. The remaining 33 major metropolitan areas in this study accounted for 15.0% of the population. Among these, the largest (Cincinnati) is about two and one-half times the size of the smallest (Youngstown).

b. Population: Core, Suburbs, and Exurbs

Core, suburbs, and exurbs are the three parts that form a metropolitan area. The exurbs are those parts of the metropolitan area that are within commuting distance of the central business district but are separated by rural land from the urbanized area (i.e., all land with more than 1,000 inhabitants per square mile contiguous to a central city of 50,000 or more inhabitants) surrounding the central business district. Since the commuting distance is set largely by transportation technology and does not vary to any great degree with the size of a metropolitan area (commuting distances as an aspect of the "radius of influence" of the central business district are discussed in Section II-3a), and the amount of land area covered by an urbanized area will increase as its population increases, the proportion of the population residing in the exurbs will generally be the larger, the smaller the metropolitan area (see column 9 in Table 3). Hence, in the case of New York, Los Angeles, and Chicago the exurbs account, on the average, for only 5% of the population. In the next two size-classes (population range from 1,600,000 to 4,600,000, i.e., from Minneapolis-St. Paul to Philadelphia), the exurbs account on the average for 15% of total population, while in the smallest size-class (the 31 metropolitan areas with population of more than 500,000 but less than 1,400,000), the exurbs account on the average for 21% of the population and, in this last size-class, metropolitan areas where the exurbs account for more than 30% of the population are not uncommon.

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[4] For a description of the data underlying the population estimates and their accuracy, see U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 371, U.S. Government Printing Office, Washington, D. C., 1967, pp. 5-12.

[5] For a very interesting profile of the Detroit metropolitan area which documents its failure to develop these special activities and suggests this should be the logical line of development in the future, see Wilbur R. Thompson in William Haber, W. A. Spiver, and M. R. Warshaw, eds. *Michigan in the 1970's*, The University of Michigan, Ann Arbor, Michigan, 1965, esp. pp. 230-234.

[6] A notable omission from the above class is Miami. The Miami area's population is substantially understated in Table 1, for it excludes the contiguous urbanized areas of Ft. Lauderdale-Hollywood and West Palm Beach. If these were included, its population would be 1,783,000, ranking it ahead of Houston. However, aside from decennial census data, little information is available for Ft. Lauderdale-Hollywood and West Palm Beach. Therefore, in order to present a wide range of data for Miami, these two SMSA's have not been consolidated with the Miami SMSA to form an SCA.

Subtraction of the population of an urbanized area from the population of the standard metropolitan statistical area or of the standard consolidated area in which it is contained gives a fair approximation of the population residing in the exurbs of a metropolitan area. The urbanized area in turn contains a "core city," which is the city with the largest central business district in terms of retail sales. Subtraction of the population of the core city from the population of the urbanized area (e.g., subtraction of the population of the city of San Francisco from the population of the San Francisco urbanized area) provides an estimate of the population residing in the suburbs, while the population of the core city itself provides an approximation of the population of the core. In this instance, however, the approximation is often imperfect in many respects, because a political unit, the core city, is being used to measure economic and technological phenomena, i.e., core and suburbs. In fact, in modern times, economic boundaries that cut across political boundaries are increasingly prevalent, so that the use of the latter for economic analysis is sharply restricted. Therefore, the basic data presented here on core and suburbs are suitable for political analysis but their use for economic analysis requires that the following definition of the core and suburbs in terms of economics and technology be kept in mind: a metropolitan area develops a core when men build urban facilities of durable materials that often last 100 years or more, while technology and tastes change considerably within a shorter time span. Therefore, builders are often faced with a choice. They may either lay out a new townscape on undeveloped land according to the new technology and tastes, or rehabilitate the core. In the former case, they encounter only natural obstacles such as mountains and rivers; in the latter, they accept an existing, man-made townscape which may include high office buildings, sewers, transportation facilities, etc. In the former case suburbs are developed, and in the latter the core is developed. Each of these represents a distinct and different pattern of urban living.

In the United States immediately after World War II, a new transportation technology – the automobile and truck – and higher incomes made feasible a new pattern of urban living. Widespread automobile ownership led to a vigorous development of suburbs on undeveloped land contiguous to the core of metropolitan areas. In the meantime, the core did not become entirely obsolete; it developed new uses and retained some old ones. The central business district, in particular, continued in the core, although changing its character in many ways.

The U. S. Bureau of the Census measures the core by designating "central counties" and "central cities." The central county in most cases covers too much land to be representative of the core. The core city concept used in this study is a modification of the Census Bureau's central cities concept. Where the Bureau has two or more central cities, the "core city," as used in this study, designates the central city with the most important central business district in terms of retail sales. Only in the case of Dallas-Fort Worth and Minneapolis-St. Paul have twin-city cores been retained in this study. The other major metropolitan areas in this study are designated by the names of the cities in these areas that have the largest central business district.

Even the core city, thus defined, still has the defect of using a political boundary to designate an economic and technological entity. Often core and core city diverge. The divergence will be most serious when a core city, such as Houston, has been able to follow a policy of vigorous annexation of postwar suburbs. Twenty-one core cities in the 46 metropolitan areas analyzed in the text of this study have increased their land area by more than 5% between 1940 and 1960. Their population, therefore, includes a substantial number of suburbanites. These metropolitan areas either are located in the South or are the smaller metropolitan areas. In the Northeast, however, and among larger metropolitan areas in the North Central and West regions, suburbanites have successfully resisted annexation by the core city. Among the areas covered in this study, there are 25 such core cities which are most representative of the core.[7] These are listed here, ranked by population size:

(1) New York
(2) Los Angeles
(3) Chicago
(4) Philadelphia
(5) Detroit
(6) San Francisco
(7) Boston
(8) Washington
(9) Pittsburgh
(10) St. Louis
(11) Cleveland
(12) Baltimore
(13) Minneapolis
(14) Cincinnati
(15) Buffalo
(16) Miami
(17) Portland
(18) San Antonio
(19) Rochester
(20) Hartford
(21) Providence
(22) Albany
(23) Akron
(24) Syracuse
(25) Youngstown

c. Trends in Population

Between 1940 and 1965, nearly every major metropolitan area in the United States grew more rapidly than the population of the United States as a whole (see Table 1, column 8). The major cause of this more rapid rate of growth was the shift in jobs away from the resource-oriented industries – agriculture, forestry, and mining – towards urban industries. The median rate of growth of major metropolitan areas over these 25 years was 2.3% per annum represented by Louisville; only two areas, Boston and Pittsburgh, grew at a rate of less than 1.0% per annum. Most major metropolitan areas in the Northeast grew at rates well below the median; those in the North Central region, at (or slightly below) the median; those in the South and West, at rates well above it. The 2.3% annual growth rate represents a 75% increase in population in 25 years.

The highest sustained rates of growth during this period were those of two smaller major metropolitan areas: San Diego and Phoenix. Phoenix nearly sextupled its population in this period, while San Diego quadrupled it. Of course, both started from a small population base, and, in *absolute terms,* their performance is not as remarkable as that of three of the largest metropolitan areas, Los Angeles, Washington, and San Francisco, which also maintained very high rates of growth throughout this entire period. Los Angeles nearly tripled its population, and this meant an addition of more than 5 million inhabitants to its population as of 1940. Washington's rapid growth implied an addition of 2.3 million. The absolute growth of Los Angeles amounts to more than the current population of Philadelphia, and Philadelphia was the fourth largest metropolitan area in the United States in 1965. Los Angeles' absolute growth is unsurpassed in the United States, but the absolute growth of Washington and San Francisco is exceeded by that of three very large metropolitan areas with growth rates below the median but with very large populations in 1940 – New York, Chicago, and Detroit. New York's 1.3% annual growth rate meant an absolute growth in population of 4.4 million; Chicago's growth rate of 1.6%, an absolute growth of 2.4 million; and Detroit's growth rate of 2.2%, an absolute growth of 2.3 million.

Within the 25-year period stretching from 1940 to 1965, there is some variation in the median rate of growth of major metropolitan areas. In the 1950-1960 decade, a high birth rate combined with the uninterrupted shift of jobs from the country to the city to produce the highest growth rates experienced between 1940 and 1965. More recently, the population growth of major metropolitan areas has slowed considerably. From a median growth rate of 2.6% in 1950-1960 (attained by Detroit and Cleveland), the growth rate of major metropolitan areas slowed to a median of 1.7% in 1960-1965 (attained by Minneapolis-St. Paul, Portland, and Dayton). During 1950-1960, nine major metropolitan areas had growth rates of 5% or more (see Table 2, column 5); in 1960-1965, not a single one attained a 5% growth rate. In 1950-1960, only one major metropolitan area (Boston) grew at a rate of less than 1.0% per annum; in 1960-1965, there were eight laggards – four of them (Pittsburgh, Buffalo, Birmingham, and Youngstown) were important steelmaking centers. Nevertheless, the median rate of growth was still above the rate of growth of the nation's population (1.5% in 1960-1965).

d. Net Migration and Natural Increase

Growth is due to two factors, the natural increase of the population and net immigration. The rate of natural increase within metropolitan areas is now higher than in rural areas because migration from the countryside to urban places has left an older population in rural areas. Yet, even in the metropolitan areas, the birth rate has dropped substantially from the high levels of the mid-Fifties (while the death rate has remained roughly un-

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[7] Prior to 1940, most of these 25 core cities extended their political jurisdiction only over built-up areas serviced by municipal facilities such as trolley lines, sewers, and urban roads; yet a few core cities (e.g., Los Angeles) pursued a policy of acquiring undeveloped land. Therefore, even these 25 core cities are not entirely representative of the core in a few cases.

Table B: Population Stability of 46 Largest Metropolitan Areas, 1950-1960 and 1960-1965

	North-east	North Central	South	West	Total
			1950-1960		
Net substantial immigration	1	3	7	7	18
Net moderate immigration	2	6	5	—	13
Stable	4	5	1	1	11
Net moderate emigration	2	—	1	—	3
Net substantial emigration	1	—	—	—	1
Total	10	14	14	8	46
			1960-1965		
Net substantial immigration	—	—	6	5	11
Net moderate immigration	2	1	2	1	6
Stable	5	10	5	2	22
Net moderate emigration	2	3	1	—	6
Net substantial emigration	1	—	—	—	1
Total	10	14	14	8	46

Note: "Stable" means immigration or emigration change of less than 0.5% per annum; "moderate," a change of 0.5% to 0.9%; "substantial," any change of 1.0% or more.

Sources: U.S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 7, and Series P-25, No. 371.

changed), thus lowering the rate of natural increase from 1.5%, during the decade 1950-1960 to 1.3% for 1960-1965.[8]

But this decline in the birth rate accounts for only a small part of the reduction in the median rate of growth of the population in major metropolitan areas from 2.6% per annum during 1950-1960 to 1.7% during 1960-1965. The largest part of this reduction in the growth rate was attributable to the decline in net migration from rural to urban areas.

Unfortunately, the over-all data on migration into urban areas for these two periods are not directly comparable, because the 1960 Census definition of SMSA's differs from that used by the Bureau of the Census since 1964.[9] Yet an indirect comparison confirms the drastic change in migration patterns of recent years (see Text Table B). Thus, during 1950-1960, 31 out of the 46 major metropolitan areas received immigration at an average annual rate of 0.5% or more (the rate exceeded 1.0% in a good many of these cases). In the South and West, 19 out of 22 major metropolitan areas experienced net immigration during 1950-1960; in the North Central region, 9 out of the 14 did so. In contrast, during 1960-1965, a minority of only 17 out of the 46 metropolitan areas was experiencing net immigration, and one large metropolitan area, Pittsburgh, even had a loss of population as net emigration exceeded the rate of natural increase. Thus, whereas the typical metropolitan area absorbed a moderate net immigration during the years 1950-1960, it was "stable" in 1960-1965.[10]

Net migration into or out of a metropolitan area has an economic effect different from that of the rate of natural increase. A lag of about five years occurs between variances in the rate of natural increase and their effect on school enrollments, and residential construction will only be affected one generation later. In contrast, young adults who move to the city and find work exert an immediate additional demand for housing in a metropolitan area.[11] Thus, the demand for residential construction in metropolitan areas received a larger stimulus from net immigration in the Fifties than it has received so far in the Sixties. At present, the main stimulus to this sector in metropolitan areas is likely to be the current high rate of household formation due to the relatively large number of so-called "war babies" now becoming young adults.

3. LAND

The exurbs constitute the difference between the SMSA and the urbanized area — both statistical measures of the metropolitan area. The SMSA includes the exurbs, wholly or in part, but they are excluded from the urbanized area. The highly settled urbanized area (minimum population densities of 1,000 inhabitants per square mile — but see Part IV for the more exact interpretation of this criterion) contains, as a rule the largest part of the population of an SMSA or SCA, but the relatively lightly developed exurbs account, as a rule, for the largest part of the land.[12] In the SMSA's of smaller population size the land area accounted for by the urbanized area forms a very small part of the entire land area included in the SMSA, less than 5% in many cases (compare columns 1 and 2 in Table 4). Therefore, the SMA and the urbanized area differ radically from each other with respect to the land area included within their boundaries.

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[8] As of 1967, the rate of natural increase appears to be even lower, about 1.0% (see Bureau of the Census, *Current Population Reports*, Series P-25, No. 371, pp. 1-2, and No. 372).

[9] For 1950-1960, see Bureau of the Census, *Current Population Reports*, Series P-23, No. 7.

[10] Population estimates have about a 3% margin of error (biased downwards). Therefore, no real significance may be attached to net migration of less than 0.5% per annum. An annual change of 0.4% compounded over 10 years gives a total change of 4%. A metropolitan area that experiences so little migration is best classified as "stable." (See Bureau of the Census, *Current Population Reports*, Series P-25, No. 371, p. 10, also see reference in footnote 1.)

[11] See the population mobility statistics broken down by age group. They indicate that the highest mobility is attained in the young adult age group (U. S. Bureau of the Census, *Population Census, 1960, Subject Reports. Mobility for States and State Economic Areas, Final Reports*, PC (2)-2B, U. S. Government Printing Office, Washington, D.C. 1963. Table 3).

[12] The exception is the huge New York urbanized area that in 1960 covered 54.5% of the land area of the SCA in which it was located.

Which gives the better estimate of the land area of a metropolitan area? Immediately after World War II, widespread automobile ownership so enhanced the ability of the American population to travel that the urbanized areas which had been built up on the basis of slower and less flexible means of intra-urban transportation – such as the trolley – included only a small part of the new metropolitan area. However, after many years of generally vigorous development of postwar suburbs, the very largest urbanized areas – New York, Los Angeles, and Chicago – may be filling the areas of development opened up immediately after World War II. But the potential expansion of the smaller major metropolitan areas is far from being completed, and the SMSA provides the better approximation of their area. Nevertheless, since SMSA's are constructed out of counties (political units) their area often does not coincide with the zone within which the technological and economic factors that shape a metropolitan area operate. These technological and economic factors consist largely of the means of intra-urban transportation. The means of intra-urban transportation determine the "radius of influence" of the central business district, and the most important aspect of the radius of influence at present is the time it takes to commute to and from work. If an employee's place of work is to be accessible, how far away can his residence be located? The answer to this question will determine the extent of a metropolitan area in terms of its most important function, that of a commuting area and a labor market.

a. Extent of Metropolitan Area

Transportation technology determines the maximum extent of any metropolitan land area by setting the radius of influence of the metropolitan center. This radius of influence is at best only broadly definable, particularly given the fact that transportation technology has been changing throughout the twentieth century and that the radius of influence is changing with it. Few transportation planners are willing to define it in terms of a precise number of miles, but approximations based on recent transportation studies are possible and can lead to an estimate of its present extent in most metropolitan areas.

Studies of the Bureau of Public Roads indicate that trips from home to place of work of more than one hour make up a negligible part of total commuting in metropolitan areas.[13] At present, the automobile and modern systems of mass transportation are estimated to attain an average door-to-door speed of roughly 30 miles per hour.[14] This would suggest that, at present, the radius of influence of the metropolitan center may be about 30 miles; the corresponding "area of influence," that is, the metropolitan area, may be about 2,800 square miles.[15]

The foregoing is a handy rule of thumb but it cannot be applied literally except in the case of metropolitan areas in the middle of nearly riverless plains such as Dallas-Fort Worth. Some metropolitan areas, such as Pittsburgh, are in hilly terrain. Others, such as Chicago and San Francisco, have located their centers on the edge of large bodies of water, and unless the central business district changes its location, which is a fairly rare occurrence, its area of influence is sharply limited on one side. Finally, nearly all other metropolitan areas contain a major waterway which can be conveniently bridged at only a few points, such as the Potomac in Washington, the Ohio in Cincinnati, the Columbia in Portland, and the Mississippi in Minneapolis-St. Paul, St. Louis, Memphis, and New Orleans. This reflects the early dependence of the United States on water transport and its continuing importance. Because of such natural obstacles, a door-to-door trip of one hour at 30 miles per hour will generally cover much less than an air distance of 30 miles. But given the mathematical relation between radius and area, a reduction of the *radius* of influence to 25 miles would decrease the *area* of influence by about 30% to approximately 2,000 square miles.

By these rough rules-of-thumb, the land area covered by an urbanized area and by an SMSA (columns 1 and 2 of Table 4) may be examined. New York, Chicago, and Los Angeles appear to be at the point where they are short of undeveloped land; although their areas of influence have been extended by the automobile (to 2,000 square miles or more) their contiguous built-up land areas have grown to comparable sizes. Among the 12 metropolitan areas in the second and third size-classes, Dallas-Fort Worth, San Francisco, Detroit, and Minneapolis-St. Paul cover extensive areas of land, but only San Francisco seems to be in the same position as the three largest SCA's, due to a combination of ocean, bay, river, and hilly terrain. San Francisco is undertaking the construction of a mass transit system which economizes on land. But metropolitan areas in the fourth class, the 31 with a population of more than 0.5 million but less than 1.4 million do not seem to lack undeveloped land; the main problem there seems to be the construction of highways to draw it into urban uses.

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[13] Except in rural areas where commuting either does not exist or, if it exists, is very long. No more than 15% of workers in metropolitan areas spend more than 45 minutes one-way in daily commuting to work and the average travel time to work for the working population is 30 minutes (see Hans J. Blumenfeld, *The Modern Metropolis*, The M.I.T. Press, Cambridge, Mass., 1967, pp. 56-65.)

[14] *Ibid.*, p. 69.

[15] There is a strong qualification to the above, namely, the state of the road network of the metropolitan area. An ideal road network would consist of a grid of freeways spaced 3 to 4 miles apart so that no point of the metropolitan area would be more than 2 miles away from a freeway. At a speed of 60 m.p.h. on the freeways, such a network would produce a radius of influence of 50 miles. Under present technology, this would constitute the maximum limit to the radius of influence, but, for many reasons, metropolitan areas do not attain the ideal road network. However, they are moving in that direction. Thus, Amos Hawley's work, based on 1950 data, suggests a radius of influence of 25 miles (see Amos H. Hawley, *The Changing Shape of Metropolitan America: Deconcentration Since 1920*, The Free Press, Glencoe, Ill., 1956, pp. 16-18); H. J. Blumenfeld's more recent work, a radius of influence of 30 miles. The growth of the Oxnard-Ventura and San Bernardino-Riverside areas in recent years suggest that the highly developed network of freeways in Los Angeles has resulted in an even greater radius of influence.

One further statement that can be made with some certainty is that the radius of influence continues to increase, but more slowly than in the past. It is always difficult to chart technological revolutions, but in intra-urban transportation there are three guideposts that provide some orientation. First, there is the walking speed of 3 miles per hour; workmen mostly walked to work during much of the nineteenth century. Then, at the turn of the century, the trolley appeared, with a door-to-door speed of about 15 miles per hour. The automobile raised the area of influence four times, from 700 square miles to 2,800, by doubling door-to-door speeds to 30 miles per hour. A comparable technological revolution in the future would require a conveyance with a door-to-door speed of 60 miles per hour and substantially higher operating speeds. While some such conveyance may now be on the drawing boards, the costs and the human engineering problems involved in such high operating speeds make it likely that it will be quite a few years before it replaces the automobile as the principal determinant of the radius of influence. For the moment, it appears that the radius of influence will continue to increase – but slowly – due to continued application of the new arts of traffic and highway engineering.

b. Growth in Area

The consistent mapping of urbanized areas started only with the 1950 Census of Population. The evidence of urbanization prior to 1950 is too fragmentary for a calculation of the pace at which urbanized areas were spreading. But the data for 1950-1960 show that in this decade major metropolitan areas had an enormous land hunger. Whereas population rose by 30% during this decade, built-up land expanded by 75%. Fifteen major metropolitan areas more than doubled their urbanized areas in the space of ten years. In 40 out of 46 major metropolitan areas, population density declined between 1950 and 1960 (see negative growth rates for population density in column 6 of Table 2). The six that increased their population density were: Los Angeles, Houston, Denver, Miami, New Orleans, and Tampa.

That the expansion of land area was greater than that of the population from 1950 to 1960 is due to several concurring factors. First, the rise in incomes during the postwar period has enabled the American consumer to upgrade his housing. There are now fewer people per housing unit, more rooms per housing unit, and generally more space per housing unit under and around the housing structure. All this means fewer inhabitants on the same residential land acreage.

Secondly, widespread automobile ownership has meant that many employers have not had to place their plants or facilities close to mass transportation in order to secure a plentiful labor supply. As a result, an economic activity could be organized horizontally if this were the most efficient way of organizing it; landscaping could be added; and, the employer could put aside land for future expansion without paying a penalty in the form of sizable property taxes. The large self-sufficient manufacturing plant has been the principal beneficiary of this development, but, as suburbs developed municipal services such as sewerage, fire and police protection, and water, medium-sized plants and other businesses such as research parks, shopping centers, stores, and warehouses – all organized on a new pattern requiring substantial land consumption – have joined the procession.

Thirdly, the new method of transportation itself requires substantially more land than the trolley or the subway, perhaps up to twenty times as much.

As a result, even major metropolitan areas such as Boston, Pittsburgh, and Providence, which had little population growth, grew vigorously in area between 1950 and 1960. Fragmentary evidence suggests that this pattern of growth is continuing in major metropolitan areas in the Northeast, but that generally in the North Central, West, and South regions population is now growing more rapidly than areas are, or at about the same pace.

4. POPULATION DENSITIES AND HOUSING

Population density is one of the most important statistics because different population densities will correspond to different patterns of living. Indeed, population density is the basic criterion for designating an area as urban. The U. S. Bureau of the Census has chosen a minimum density of 1,000 inhabitants per square mile as its criterion for distinguishing an urbanized area. In computing this density, the Bureau of the Census excludes land used for such purposes as railroad yards, cemeteries, tank farms, etc. The resulting density used as a criterion for urbanized areas is close to being a "residential density" rather than a population density. A residential density is computed by dividing the number of inhabitants by the number of square miles actually in residential use.

a. Population Densities and Residential Densities

Residential densities are a familiar tool of the urban designer and the architect. Given a certain type of housing, he knows the number of families per acre of land covered by this housing. Thus, a type of housing can be relatively easily associated with a particular residential density, i.e., the number of inhabitants per square mile. The following table presents seven important types of housing structures and the residential densities that correspond to them:

Type of Housing	Residential Densities[16] *(Inhabitants per square mile)*
Lowest-density one-family, detached on 2½ acres	1,000
Low-density one-family, detached on ¼ acre (i.e., 11,000 sq. ft.)	10,240
High-density one-family detached on 1/18 acre (i.e., 2,400 sq. ft.)	43,520
Widely spaced two-to-four-family housing	38,400
Closely spaced two-to-four-family housing	103,680
Low-rise five-or-more-family apartment houses	25,600
High-rise five-or-more-family apartment houses	202,240

A comparison of residential densities with population densities of urbanized areas indicates that a major part of the land in urbanized areas is serving nonresidential purposes. For example, the island of Manhattan – the most intensively developed residential area in the United States – had a population density of 77,000 inhabitants per square mile in 1960. This density is lower than that of closely spaced two-to-four-family housing, but, in 1960, 96% of the housing units in Manhattan were in five-or-more-family apartment houses and these were nearly all of the high-density, high-rise variety. The remaining land is occupied by commercial buildings, factories, roads, schools, etc. The difference between residential and population densities is even more startling in the suburbs. The suburbs of New York, Los Angeles, and Buffalo have the highest population densities among those of the 46 major metropolitan areas. Yet, they are in the range between 4,000 and 4,500 inhabitants per square mile, well below the residential density of 10,240 inhabitants per square mile which would result from a low density suburb made up entirely of single-family houses on one quarter acre each.

In order to move from population densities to residential densities information is needed on the land used for transportation, for manufacturing and commercial structures, and for institutions such as schools. But such information is not available on a comparable basis. Where there is extensive urban planning, land has usually been classified according to its uses, but, for the moment, there exists no standardized classification scheme which would render comparable the data used by different planners in different metropolitan areas. Even information on residential land usage alone would be a valuable step forward, for then the residential densities of metropolitan areas could be computed.

Manufacturers, merchants, and government officials, however, also use land sparingly when the householders do so, that is, when the price of land is high.[17] Therefore, there will tend to be at least a rough correspondence in the ranking of residential densities and population densities.

That the correspondence between the ranking by population density and the ranking by residential density can often be very loose may be surmised from a comparison of Hartford and Tampa, which have nearly the same population density of about 2,900 inhabitants per square mile. But 78.6% of Tampa's housing units were trailers or one-family detached houses (in 1960), while this was the case for only 43.9% in Hartford (see Table 5). This indicates much higher residential densities in Hartford than in Tampa. The cause of this difference is that Hartford contains a substantial amount of manufacturing, while in Tampa manufacturing is relatively unimportant. Each has attained the same low population density for different reasons: Tampa because of low residential density and Hartford because of substantial manufacturing land usage.

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[16] Calculations based on the assumption that there is no overcrowding, i.e., no more than one person per room. On this basis it has been calculated that there are four inhabitants per housing unit in one-family detached housing, three per housing unit in apartment houses. If overcrowding is permitted, residential densities (and population densities) can skyrocket, as is the case in some slums. The residential densities are derived partly from estimates of housing units per structure in the survey of San Francisco by Arthur D. Little, Inc. See *Community Renewal Programming: A San Francisco Case Study,* Frederick A Praeger, New York, 1966.

[17] Even the government official has this incentive because institutional uses remove land from the property tax rolls.

b. Population Size, Region, and Population Density

The population density of the 46 major metropolitan areas varies according to their population size and the region in which they are located. Los Angeles' population density is the lowest among the three largest SCA's, but surpasses that of 37 other major metropolitan areas. It is 30% higher than the median of 3,626 inhabitants per square mile (represented by Seattle). Among the 12 medium-sized major metropolitan areas, Boston, with a population density of 4,679 inhabitants per square mile, and San Francisco, with a population density of 3,817 inhabitants per square mile, are closest to the median value of 4,250 inhabitants per square mile for these two size-classes. Therefore, this median is not representative. The median of the smallest size-class (500,000 to 1,400,000 population), about 3,300 inhabitants per square mile, is rather representative. Portland, Sacramento, San Antonio, Birmingham, Kansas City, Toledo, Akron, New Orleans, and Atlanta are all close to this value.

Major metropolitan areas in the Northeast are above the median population density, except for Pittsburgh, Hartford, and Providence. In the North Central region, 10 of the 14 urbanized areas are in the 3,000 to 5,000 range (that is, fairly close to the median), but in the West, seven out of ten are in the somewhat lower 2,000 to 4,000 range. The South is heterogeneous. Washington and Baltimore are large cities in Megalopolis with very high population densities, while Dallas-Fort Worth, Houston,and Oklahoma City display the lowest densities among the larger SMSA's of the nation. Population densities for major metropolitan areas are generally higher in the older areas in Megalopolis and progressively lower in the newer ones in the Southwest.

c. Core City and Suburban Population Densities

In general, the population densities of the cores are higher than those of the suburbs, but there are three exceptions, San Diego, New Orleans, and Oklahoma City. In all these, however, the core city extends far beyond the limits of the core, for the city of San Diego contains 70% of San Diego's urbanized area; the city of New Orleans, 75% of its urbanized area; and Oklahoma City, 84%. Therefore, one may generalize safely that – unless it contains a large part of what is strictly speaking suburbs – the core city has a substantially higher population density than the suburbs. Nevertheless, there are some cases, notably Los Angeles, Tampa, and Sacramento, where the core city occupies less than 40% of the urbanized area, yet has a population density that is only slightly higher than that of its suburbs. These so-called "spread" cities are not common among *major* metropolitan areas in the United States; in all other cases, whenever the core city covers less than 40% of the urbanized area, core city densities tend to be three to seven times as high as the suburban densities.

Population density in the suburbs varies within a fairly narrow range. In 42 of the 46 cases, it is above 1,000 and below 4,000 inhabitants per square mile. There is no regional pattern apparent, despite the fact that in the older regions of the nation (the Northeast and parts of the North Central region) suburban expansion engulfed already established cities such as Newark in the New York metropolitan area and New Britain in the Hartford metropolitan area. In such suburbs, one might expect higher population densities, yet this is not the case. Nevertheless the relatively narrow range of suburban population densities masks substantially different types of suburban areas characterized by widely differing residential densities. If one compares the suburbs of Washington with those of Phoenix, one finds that Washington's suburbs have double the population density of Phoenix's (3,740 vs. 1,850 per square mile). Both major metropolitan areas have little manufacturing or transportation activity. Therefore, the residential density of suburban Washington is probably about double that of suburban Phoenix. Cleveland, which specializes in heavy manufactures, has about the same suburban *population* density as Phoenix; but its suburban *residential* density is bound to be much higher than that of Phoenix because of the heavy land usage for manufacturing. In the case of the suburbs with the lowest population densities, those of Dallas-Ft. Worth, Minneapolis-St. Paul, Milwaukee, and Toledo, it is probably a combination of low residential density and heavy usage of land for transportation and manufacturing that drives suburban density below 1,500 inhabitants per square mile, and hence increases land consumption to above 0.4 acres per inhabitant.

Core cities, in contrast, have a far wider range of variation of population density. Even when the core cities that occupy more than 40% of their urbanized area are excluded, population density ranges from 5,000 inhabitants per square mile (in the case of Toledo and Akron) to 16,000 (Chicago) and 25,000 (New York). The average density for the whole urbanized area tends to reflect variations in the population density of the core city and the proportion of the urbanized area it covers. For example, the core city of the San Francisco metropolitan area has a relatively high population density of 15,000 to 16,000 inhabitants per square mile, but because it covers only 6.0% of its urbanized area, the San Francisco urbanized area has a low population density relative to its magnitude. The opposite case is represented by Indianapolis. While its core city has a population density of only 6,700 inhabitants per square mile, the population density of its total urbanized area is higher than that of San Francisco (4,400 inhabitants per square mile for Indianapolis, 3,800 for San Francisco) because Indianapolis' core city covers 49.1% of its urbanized area.

Whereas the population density of the suburbs shows no marked regional pattern, the population density of the core cities in the Northeast was around 13,000 inhabitants per square mile; in the North Central region, about 7,000; in the West, about 5,000; and in the South, about 3,000. The very low population density in the South reflects to some extent the more frequent annexation of suburban areas. But this regional pattern suggests also that the age of a core city or urbanized area is another factor that tends to affect population density. Except for the special development in the South, it can be stated that, the older an urbanized area, the higher the population density of its core city and the larger its core relative to the total built-up area.

d. Age of Housing in Major Metropolitan Areas

Since the full impact of the automobile age was not felt until immediately after World War II, it is reasonable to assume that most housing that was at least 20 years old at the time of the 1960 census had been built with a substantially different transportation technology in mind.[18] Therefore, housing and other structures built prior to 1940 are different from those built after 1940, particularly with respect to the use of land. Freed from the necessity of clustering buildings around stops on mass transportation systems (such as trolleys and commuter railroads) builders have not had to economize land as much as before. Immediately after World War II a parcel of land with access to places of employment, shopping, etc., was relatively cheaper than it had been in the age of trolleys and railroads. Consequently the percentage of housing units in an urbanized area that were built prior to 1940 provides a useful guide to the nature of housing in a major metropolitan area, and the age of other structures is likely to correspond roughly to the age of the housing stock.

Both the 1950 and the 1960 Census of Housing contained a classification of structures according to the decade in which they were built. This provides a quantitative measure of age.

On this basis, Boston — with 80% of its housing units in structures built prior to 1940 — stands out as the "oldest" city in the United States. Some juxtapositions are surprising and enlightening. For example, Baltimore (with 56.9% of housing units in structures built before 1940) and Portland (with 56.5%) are both close to the "median age" (56.7%) despite the large difference between the dates of their first settlement. In 1960, Washington and Los Angeles had nearly the same proportion of housing constructed prior to 1940 (39.4% and 39.2%, respectively) and so did New York and Chicago (71.5% and 70.1%, respectively).

Certain regional differences remain, however. Major metropolitan areas with the highest percentage of pre-1940 structures are mostly located in the Northeast. These have highly developed cores, regardless of size of population. Ten of the fourteen major metropolitan areas in the North Central region fall into the 60%-70% range. The largest among these, Chicago, St. Louis, and Cleveland, all have a large core city with a population density of more than 10,000 inhabitants per square mile.

A rather loose grouping of 16 urbanized areas falls into the 40%-60% range. Here the younger cities in the North Central region (e.g., Detroit and Dayton) mingle with the older cities in the South and West (San Francisco, Baltimore, Seattle, and New Orleans). In most metropolitan areas in this group more than 60% of housing units are in trailers or single-family detached structures (Baltimore and New Orleans are exceptions).

There are eleven major metropolitan areas in the South and West in which a substantial majority of housing units is in structures built after 1939. This group includes a large number of the postwar "spread" cities, such as Phoenix, with 81.2% of its housing units in single-family structures; Oklahoma City, with 70.8%; Tampa, with 78.6%; Houston, with 78.0%; and Dallas-

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[18] Los Angeles and some of the major metropolitan areas in the Southwest are the possible exceptions to this rule. One may note, however, that many of the high-income suburbs in other major metropolitan areas that were built in the prosperous Twenties were designed on the assumption that those who commuted to work would use the railroad or express trolley, although their residents could and did own cars.

Fort Worth, with 76.6%. But not all "young" cities are "spread" cities. Washington, for instance, though "young," has only 40.2% of its housing in single-family structures.

e. Type of Housing in Major Metropolitan Areas

Apartment dwelling (occupancy of housing units in structures for five or more families) is neither typical of the United States as a whole nor of the 46 major metropolitan areas covered in this study. In 1960, only three major metropolitan areas, New York, Chicago, and Washington, had more than a quarter of their housing units in apartment houses. The median proportion (represented by Columbus) was 11.3% of total housing units. In quite a few major metropolitan areas, however, the housing stock contained a significant proportion of attached one-to-four-family houses. This was the case especially in the larger or older cities such as Baltimore (63.7%), Philadelphia (62.0%), Albany (47.7%), Buffalo (45.7%), New Orleans (43.3%), and Milwaukee (37.1%). Such housing is generally cheaper to construct than detached single-family structures. Part of it is in middle-class suburban areas developed prior to World War II, and is now filtering down to lower income groups, while another part has always been occupied by lower-income groups. In the postwar period, construction of one-to-four-family attached housing fell off rapidly to 6%-7% of the total housing units constructed in 1959-1966.[19]

In 1960, among major metropolitan areas, three large urbanized areas had over 25% of their housing stock in apartment houses; four urbanized areas had 20%-25% apartment housing (San Francisco, Seattle, Miami, and Hartford); but the other old and large urbanized areas contained a large proportion of one-to-four-family attached housing. Additions to the stock of this type of housing have been relatively insignificant lately, except in some of the younger major metropolitan areas. Finally, in the old, but relatively small, and the younger major metropolitan areas, single-family detached housing structures account for the major proportion of all housing units.

f. Current Trends in Population Densities

The only complete and reliable evidence of the changes in population density of urbanized areas is found in the 1950 and 1960 Censuses of Population. It indicates that, during the period 1950-1960, 40 out of 46 major urbanized areas decreased their population density, in many cases substantially. Fragmentary additional evidence suggests that the 1950-1960 experience cannot be simply extrapolated into the past or the future.

Table C: Population Densities of Six Core Cities, 1940-1965

	Inhabitants per square mile				Annual Rate of Change 1940-1965 (Per cent)
	1940	1950	1960	1965	
New York:					
Manhattan	85,905	89,096	77,195	70,942	−0.8
All boroughs	24,933	25,046	24,697	25,512	+0.1
Philadelphia	15,183	16,286	15,743	16,157	+0.2
San Francisco	14,223	17,385	15,553	15,147	+0.2
Washington	10,799	13,065	12,442	13,148	+0.8
St. Louis	13,378	14,046	12,296	11,508	−0.6
Baltimore	10,916	12,067	11,886	11,962	+0.4

Sources: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 371 and 1940, 1950 *Census of Population*.

First, the boundaries of ten counties happen to coincide with the boundaries of six large core cities (New York, Philadelphia, San Francisco, Washington, St. Louis, and Baltimore); therefore, information on the population density of these six cities can be obtained for the years before 1950, and up to 1965. On balance, there has been little change in the population densities of these six large core cities between 1940 and 1965 (see the last column in Text Table C). Yet this apparent "stability" masks two short-term trends which, over the entire period, canceled each other out. From 1940 to 1950, all six core cities *increased* their population density, whereas from 1950 to 1960, they *decreased* their population density. The performance during the years 1960-1965 has been mixed. Four core cities increased, and two decreased, their population density.

Second, residential construction data for metropolitan areas can be analyzed in a way which provides information on the trend in population density. The basic clue in this type of analysis is the close association of the type of housing with an established "residential density" (see Table 6). Thus, for example, if a major metropolitan area had 29.3% of its housing stock in trailers and single-family detached housing in 1960, but from 1961 to 1966 constructed on the average 48.8% of its housing units in the form of single-family houses – as was the case in the Philadelphia SMSA – this metropolitan area is decreasing its residential density and probably its population density, too.

An analysis of the data presented in Table 6 suggests that, during the years, 1961-1966, five major metropolitan areas (Philadelphia, Baltimore, Buffalo, Providence, and Albany) appear to have reduced their residential density substantially. But the reverse occurred in six others (Los Angeles, Dallas-Fort Worth, Houston, Minneapolis-St. Paul, Miami, and Phoenix). The former group consists of "old" areas in the Northeast. With the exception of Minneapolis-St. Paul, the latter group consists of "young" areas in the West and South. As for the remainder, 17 showed little change, 12 showed signs of an increase in residential density, and 7 showed signs of a decrease.

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[19] See U.S. Bureau of the Census, *Construction Reports-Building Permits, Housing Authorized in Permit Issuing Places, Summary Statistics: 1965*. U.S. Government Printing Office, Washington, D.C. 1966, and the preliminary report for 1966.

Residential density and population density are usually moving in the same direction at any one time. Changes in both are induced by changes in the price of land. Just as the homeowner chooses a smaller home site when residential land prices rise, other urban builders also use land more sparingly. Even governments limit their use of land because they are reluctant to remove valuable land from the tax rolls.

It seems likely, therefore, that the 1950-1960 trend of most major urbanized areas towards reduced population density has been arrested, or, in many cases, even reversed since 1960. In the South and West, the 1950-1960 trend appears to have been reversed. In the North Central region it has been arrested, but in the Northeast, it appears to continue.

Currently, most urban planners deplore residential densities that are substantially above 60,000 inhabitants per square mile.[20] It is estimated that when this density is exceeded, more and more apartments are cut off from light and air. But renting and apartment-dwelling appeals to numerous groups of the American population, such as the elderly for whom the upkeep of a large plot may become burdensome, the unmarried, families on the move, childless couples, and couples where both members work.

At present, there appear to be two main patterns to residential development: a "low density" pattern of under 10,000 per net residential square mile, and a "high density" pattern ranging from 10,000 to 60,000 per net residential square mile. When modern urban designers are in a position of planning a whole new town – as in Palos Verdes, California, or Reston, Virginia, for example – they often try to combine the two densities, producing thereby a "balanced" community.

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[20] E.g., see Lewis Mumford, *The Highway and the City*, Harcourt, Brace & World, Inc., New York, 1963, p. 235, and Hans J. Blumenfeld, *op. cit.*, p. 172. (For a strong dissent and the recommendation of high residential densities, however, see Jane Jacobs, *The Death and Life of Great American Cities*, Random House, New York, 1961.)

III. Employment and Income

THIS PART PRESENTS, in two sections, the available data on employment and income, two variables that have not been measured as frequently or as accurately as population and housing. The measurement of income at the SMSA level presents especially formidable difficulties.

The first section deals with three major aspects of employment. First, employment in the major metropolitan areas, classified by type of economic activity, is reviewed. Next, manufacturing is examined with respect to *value added* by major industry groups, in order to determine specialization within manufacturing (which is the largest single economic activity for 29 out of 46 major metropolitan areas). Finally, this section concludes with an examination of trends in employment in major metropolitan areas.

The second section brings together some of the meager income data for metropolitan areas in an attempt to review differences in income and in manufacturing wages.

1. EMPLOYMENT

The decennial population censuses provide the only complete count of the entire labor force by industry and by occupation. Up-to-date estimates or counts of the labor force by geographical distribution normally exclude the military and the self-employed (the first for national security reasons, and the second because the reporting requirement tends to prove burdensome to many of the self-employed). The Bureau of Labor Statistics produces statistics on employment classified by major industry group for "labor areas" that are in nearly all cases the same as standard metropolitan statistical areas; these statistics exclude only the military, the self-employed, and agricultural employment. The latter exclusion is desirable from the point of view of this study which focuses on urban industries and occupations. But, in the case of 16 out of 46 major metropolitan areas covered here, data on manufacturing and service employment were lumped together by the Bureau of Labor Statistics. An attempt can be made to sort out this information even in these 16 cases by using another source of employment data, *County Business Patterns,* published by the Department of Commerce on the basis of Social Security data. Yet this source excludes – in addition to the military and self-employed – all government employment, railroad employment, and several other minor types of employment. Altogether it only covers about two thirds of total employment. Information from this source was used to supplement the data of the Bureau of Labor Statistics, but the information itself is not presented here because of its limited coverage of the labor force. Only the data from the Bureau of Labor Statistics for March 1, 1967, are presented (Tables 7 and 8).

a. Types of Employment

The major metropolitan area, when defined as a commuting area, corresponds most closely to the concept of a labor market. It is that area within which employer and employee are accesssible to each other. As of March 1, 1967, New York constituted the largest labor area, with a total of 6,308,000 employees; Norfolk was the smallest, with 180,000 employees. There existed some variation in the ratio of employment to population and, therefore, the major metropolitan areas with the larger populations were not always the ones with the larger employment. Thus, Los Angeles, ahead of Chicago in population, trailed it with respect to employment. The widest departure occurs in the case of Tampa, which has a large number of retired individuals, but in most other cases the departures are not substantial enough to require a separate analysis.

Nonagricultural civilian employment in major metropolitan areas has been divided here into seven industry groups: *Mining and Manufacturing, Contract Construction, Transportation and Public Utilities, Wholesale and Retail Trade, Finance, Insurance, and Real Estate, Service and Miscellaneous,* and *Government.* The most homogeneous of these industry groups are *Mining and Manufacturing, Contract Construction,* and *Government. Service and Miscellaneous* is the most heterogeneous. Indeed, it is a catch-all that can tell us very little about the industries contained in this industry group.

Mining and Manufacturing

Mining forms an insignificant part of the mining and manufacturing group in major metropolitan areas. The criterion chosen for classifying a major metropolitan area as specializing in manufacturing is that it have a higher percentage of its labor force in manufacturing than the New York SCA (28.4% in 1966). The mix of the New York SCA has been chosen as the criterion because this area, with its huge labor market (employment of 6,308,000 in March, 1967) comes closest to representing a "balanced" major metropolitan area.[1] There are 22 major metropolitan areas that have a higher percentage of their nonagricultural civilian employment in manufacturing than the New York SCA has, and there are 23 that have a lower percentage of manufacturing employment.

Among the 22 major metropolitan areas with a specialization in manufacturing, Youngstown is the most specialized (47.7% of its nonagricultural civilian labor force is in manufacturing). Altogether, there are 10 "heavily specialized" areas (in order of specialization):

(1) Youngstown
(2) Rochester
(3) Akron
(4) Providence
(5) Detroit
(6) Dayton
(7) Hartford
(8) Milwaukee
(9) Cleveland
(10) Buffalo

This listing includes both larger major metropolitan areas (such as Detroit and Cleveland) and the smaller ones (such as Youngstown and Akron), all of them in the manufacturing belt. All ten have the common problem that accompanies a high degree of specialization in employment: vulnerability to fluctuation in the business cycle and to locational shifts of industry. This is particularly true for those areas – such as Detroit, Youngstown, and Akron – that are highly specialized within manufacturing.

A good illustration of this vulnerability is Pittsburgh which, in 1953, at the end of the Korean war, had 43.4% of its nonagricultural civilian employment in manufacturing (19.1% in the production of steel). By 1966, manufacturing employment in Pittsburgh was down to 80% of its 1953 level and accounted for only 35.9% of total nonagricultural civilian employment.

The other 12 less-specialized manufacturing areas are (in order of their specialization):

(1) Chicago
(2) Pittsburgh
(3) Cincinnati
(4) Toledo
(5) Louisville
(6) Philadelphia
(7) Indianapolis
(8) St. Louis
(9) Syracuse
(10) Los Angeles
(11) Seattle
(12) Birmingham

Three of the twelve are outside the manufacturing belt (Los Angeles, Seattle, and Birmingham). Manufacturing employment in Seattle and Los Angeles has had vigorous growth (5.1% and 3.0% per annum, respectively, between 1953 and 1966). Pittsburgh and Syracuse have suffered absolute declines in manufacturing employment between 1953 and 1966 and consequently have become less heavily specialized in manufacturing. Although manufacturing is first in importance in these major metropolitan areas, none of them can be said to have all its eggs in one basket. Some areas have important transportation functions as well, for example, Chicago, St. Louis, and Cincinnati.

In the following six major metropolitan areas manufacturing employment accounts for a smaller proportion of nonagricultural civilian employment than it does in the New York SCA:

(1) Baltimore
(2) Minneapolis-St. Paul
(3) Kansas City
(4) Dallas-Fort Worth
(5) Boston
(6) Columbus

But even in these SMSA's manufacturing provides the single greatest share of employment among the seven industry groups.

In the remaining 17 major metropolitan areas, some other sector, usually wholesale and retail trade or government, accounts for a greater share of total nonagricultural civilian employment than does manufacturing.

Contract Construction

Other things being equal, the more rapid the growth of a major metropolitan area, the larger the proportion of its labor force in contract construction. This proposition holds when no allowance is made for replacement demand. An "old" major metropolitan area may generate substantial construction merely through a high replacement demand, though its population may be stable or even declining (e.g., Pittsburgh). Nonetheless, there is good reason to think that the 12 major metropolitan areas with the greatest proportion of contract construction employment as of 1967 were experiencing rapid growth. Listed in the order of their relative shares of construction employment, they were:

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[1] If the nationwide average (30.1%) had been used as the criterion, the same SMSA's would have been classified as "manufacturing."

(1) Houston
(2) New Orleans
(3) Tampa
(4) San Antonio
(5) Norfolk
(6) Washington
(7) Miami
(8) Birmingham
(9) Dallas-Fort Worth
(10) Memphis
(11) Baltimore
(12) Denver

Only Baltimore, among these twelve, is an "old" city whose construction employment might be swelled by replacement demands. With the sole exception of Denver, all the rest are in the South, and three (New Orleans, Birmingham, and Memphis) are in the Deep South, a region bypassed by rapid growth during the Fifties and early Sixties. The construction employment data for 1967 suggest the possible emergence of a new growth-belt in the South of the nation, stretching from Miami in the Southeast to San Antonio in the Southwest.

Transportation and Public Utilities

Transportation and public utilities is a rather heterogeneous industrial group. Its three subcomponents (in the Standard Industrial Code) are transportation, communications, and public utilities and sanitary services. In 1960, transportation alone accounted for 4.2% of total U.S. employment; communications, for 1.3%; public utilities and sanitary services, for 3.4%. Combined employment in communications plus public utilities and sanitary services is fairly evenly spread throughout the nation; that is, every major metropolitan area has about the same proportion of its labor force employed in these two industry groups.[2] The share of transportation employment, however, varies substantially.

If a center shows a proportion of employment in transportation that is higher than the average for the United States, this tends to indicate a transportation hub with a fairly well defined "hinterland." This hinterland will often use the transportation hub as a wholesale, or even retail, center. Consequently transportation hubs tend to show higher proportions of employment in wholesale and retail trade than other major metropolitan areas. Another, more recent type of SMSA with a high proportion of employment in transportation is the "vacation center."

With the development of air travel, longer vacations, and rising incomes, small vacation centers have grown into major metropolitan areas in the United States, with a high proportion of employment in transportation (to handle the flow of tourists).

The twelve major metropolitan areas with the highest proportion of employment in transportation are (in order of the importance of transportation employment):

(1) New Orleans
(2) Miami
(3) Kansas City
(4) Atlanta
(5) Houston
(6) San Francisco
(7) Norfolk
(8) Portland
(9) Dallas-Fort Worth
(10) Denver
(11) New York
(12) Minneapolis-St. Paul

Wholesale and Retail Trade

In 1960, wholesaling accounted for 3.3% of total employment in the United States; retailing, for 14.3%. Wholesaling employment varies substantially from one major metropolitan area to another, whereas retail employment is, much more evenly spread among major metropolitan areas. Retail trade is the third most important category of employment after manufacturing and government, but the use of employment as a measure of importance tends to inflate the importance of retail trade. Wages tend to be relatively low in this sector of the economy and there is much part-time work. Thus, in 1966, average weekly earnings in retail trade were $67, compared to $106 in wholesale trade and $107 in manufacturing.

In the past, it has been generally assumed that retail trade is the most passive sector of employment, always following increases in other sectors. But some vacation and resort areas have succeeded in turning retail trade into a "leading sector." Thus, among the major metropolitan areas with the greatest share of employment in wholesale and retail trade, three are "leisure" areas (Miami, Tampa, and Phoenix). The twelve leading areas are (in order of the importance of wholesale and retail trade):

(1) Tampa
(2) Miami
(3) Dallas-Fort Worth
(4) Houston
(5) Atlanta
(6) Memphis
(7) Portland
(8) Denver
(9) San Antonio
(10) Phoenix
(11) Minneapolis-St. Paul
(12) Norfolk

All are outside the manufacturing belt. San Antonio and Norfolk are military centers, and seven are important transportation hubs with manufacturing specialized towards the inputs or outputs of the economic region in which they are located (e.g., lumber in Portland, oil machinery in Dallas, petrochemicals in Houston, and cotton machinery and chemicals in Memphis).

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[2] See Gunnar Alexandersson's *The Industrial Structure of American Cities*, Almquist & Wicksell, Stockholm, 1956, a systematic and detailed investigation of the industrial structure of American urbanized areas, based on the 1950 Census of Population data. The analysis has not been repeated for the 1960 Census of Population data; therefore, some of Alexandersson's results may be somewhat outdated, but the above is likely to continue to hold.

Finance, Insurance, and Real Estate

The finance, insurance, and real estate industry has grown rapidly since 1940; yet it accounted for only 4.9% of nonagricultural civilian employment in 1966. It is unevenly distributed among major metropolitan areas.

Finance, insurance, and real estate employment is heavily concentrated in the largest of the major metropolitan areas. The fifteen major metropolitan areas in the first three size-classes account for about 46% of all employment in this industry group in the United States, although they contain only 32% of the nation's population. New York, Los Angeles, and Chicago (with only 16% of the nation's population) provided 27% of the nation's employment in finance, insurance, and real estate.

Despite this general tendency towards a concentration of finance, insurance, and real estate employment in the largest SCA's and SMSA's, there are some exceptions: among the large ones, Detroit, Cleveland, and Pittsburgh have relatively little employment in this industry group; but two SMSA's in the fourth size-class stand out as financial and insurance centers, Hartford and Atlanta. The top twelve (in order of the relative importance of this sector are):

(1) Hartford
(2) New York
(3) Dallas
(4) Atlanta
(5) Birmingham
(6) Boston
(7) Phoenix
(8) Indianapolis
(9) San Francisco
(10) Miami
(11) Kansas City
(12) Portland

Government

The government pattern of taxing and spending may lead to a substantial redistribution of income not only among individuals, but also among cities and regions. Thus, it can exert an important influence on the geographic distribution of employment and growth. This is amply illustrated by the development of such "government" towns as Sacramento and Washington. In Sacramento, 40.5% of employment is in government; in Washington, 38.6%.

The American preference for not placing governmental functions in the largest cities (expressed at the very birth of the nation when Philadelphia, the largest city at that time, was rejected as the national capital) still prevails today. Among the largest SMSA's, only two have an above-average share of government employment: Washington and San Francisco. The other ten major metropolitan areas with the highest shares of government employment are all in the smaller size-classes of SMSA's. The twelve top "government cities" are (in order of the relative importance of government employment):

(1) Sacramento
(2) Washington
(3) Norfolk
(4) San Antonio
(5) Oklahoma City
(6) San Diego
(7) Albany
(8) Columbus
(9) San Francisco
(10) Denver
(11) Dayton
(12) Memphis

In the first six cities, government employment far exceeds manufacturing employment. Therefore, they are substantially insulated from the fluctuations of the business cycle, but not from the dangers of cutbacks in government employment. This is especially true for the four cities that depend heavily on military employment (Norfolk, San Antonio, Oklahoma City, and San Diego).[3]

In the second six cities, the government sector is balanced by a sizable manufacturing sector. As a result, their employment has shown stable growth despite their small size.

Service and Miscellaneous

This industry group is too heterogeneous to lend itself to further analysis of employment in major metropolitan areas. It includes domestic services, hotels, doctors, lawyers, hospital employment, repair services, clergy, business services, and many other activities that have little in common. This sector accounts now for 14.7% of all nonagricultural civilian employment in the United States.

b. Relative Shares of Value Added in Manufacturing in Major Metropolitan Areas

There are available percentage breakdowns for each of the 48 SMSA's and SCA's, giving the relative shares of value added in manufacturing by each industry. These provide important information on the degree of specialization (or diversification) of manufacturing in these major metropolitan areas (Table 9). The percentage distribution of value added by industry for the entire United States may be viewed as setting the pattern for a diversified self-sufficient manufacturing economy. Only the largest major metropolitan areas are found to adhere closely to this pattern; in most smaller major metropolitan areas the dominant industry usually provides a much higher percentage of total value added than it provides for the country as a whole, and some of the leading manufacturing industries are lacking.

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[3] For example, total nonagricultural civilian employment declined in San Diego between 1961 and 1964, a period when employment, buoyed by the upswing of the trade cycle, was expanding rapidly throughout the United States.

More specifically, New York, Los Angeles, and Chicago have diversified manufacturing sectors that follow rather closely the pattern of the entire manufacturing sector of the United States. This high degree of diversification is facilitated by the large size of their manufacturing sectors: $19 billion, $10 billion, and $12 billion respectively, in 1963. Such large manufacturing sectors are feasible in areas that have a long radius of influence, permitting one single commuting area to contain more manufacturing than a small but industrialized European nation.[4]

In smaller major metropolitan areas there are lesser degrees of diversification. Philadelphia is still highly diversified along the lines of total U.S. manufacturing, but Detroit has a heavy concentration in "transportation equipment." This concentration does not, however, signify an extremely high degree of specialization because transportation equipment accounts for a large share of value added in manufacturing for the entire country (11.9% in 1963). In contrast, some of the smaller major metropolitan areas are often specialized in a sector that accounts for a relatively small share of total manufacturing in the United States; for example, Rochester, with 50.0% of manufacturing value added in instruments and related products; Akron, with 45.1% in rubber and rubber products; Houston, with 31.2% in chemicals and allied products; and Providence, with 17.7% in jewelry and silverware and costume jewelry and notions.

The three steel centers, Pittsburgh, Birmingham, and Youngstown derive 46.4%, 56.6%, and 54.7%, respectively, of their value added in manufacturing from primary metals. But transportation equipment is the specialization most often found in major metropolitan areas, including Seattle (62.7%), Atlanta (40.2%), Dallas-Fort Worth (27.4%), Indianapolis (27.4%), Toledo (24.4%), St. Louis (24.3%), Kansas City (24.2%), and San Diego (22.0%), in addition to Detroit.

Although electrical and other machinery accounts for the largest share of value added in manufacturing in the United States (17.9% in 1963), it is not a frequently encountered specialization. The largest diversified metropolitan areas "specialize" in this industry; but there are only three additional (smaller) SMSA's in this field, Milwaukee, Dayton, and Syracuse.[5]

The five leading metropolitan areas, New York, Los Angeles, Chicago, Philadelphia, and Detroit, accounted for 28% of manufacturing value added in the United States in 1963. One or another of these large manufacturing centers accounted for a large proportion of total U.S. value added in several important industries: Los Angeles, in ordnance and accessories (36%); New York, in apparel and related products (34%) and printing and publishing (25%); Detroit, in transportation equipment (12%); and Chicago, in primary metals (12%).

c. Analysis of Shift in Employment

Trends in employment in major metropolitan areas during the periods 1940-1950 and 1950-1960 are reviewed here in the framework of "shift analysis" (Tables 10 and 11).[6] Shift analysis is basically an attempt to utilize relative changes in order to separate three components of actual change — the national growth component, the industrial mix component, and the regional share component. The first step in applying shift analysis to employment is the computation of a "national growth component" for each SMSA or SCA by applying the national average annual growth rate to the employment of the base year (e.g., 2.4% per annum applied to the 1940 employment of each area in Table 10). This national growth component indicates the hypothetical gain in an area's employment that would have resulted from an employment growth rate equal to that of the nation as a whole.

But the actual gain in employment will seldom correspond to the hypothetical gain based on national growth. The second step is designed to explain such deviations by taking the local industry mix into account. It is assumed that growth larger than national growth is due to the presence of industries in which employment is growing more rapidly than in the nation as a whole — a favorable industry mix. Less rapid growth would be due to the presence of slowly growing industries. In order to calculate the industrial mix component, the national rate of employment is computed separately for each industry, and the excess of this industry growth rate over the aggregate national growth rate (or its short-fall, as the case may be) is applied to the area's employment in this industry in the base year. This procedure is repeated for each industry. These hypothetical employment gains (or losses), when summed for all industries in the SMSA, result in the "industrial mix component."

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[4] For example, Belgium's total GNP in 1965 was $16 billion.

[5] Because of the nonavailability of data, due to the disclosure rule, one cannot compute the precise specialization of Dayton and Syracuse in this industry, but it is undoubtedly considerable.

[6] "Shift analysis" of employment was first utilized in 1942 by Daniel Creamer in a study of the location of manufacturing. See Daniel Creamer, "Shifts of Manufacturing Industries" in National Resources Planning Board, *Industrial Location and National Resources,* U.S. Government Printing Office, Washington, D.C., 1943, pp. 85-104.

When the national growth component is added to the industrial mix component, another hypothetical gain (or loss) in employment is obtained. If there were no shifts in employment in each particular industry from region to region within the United States, the actual gain (or loss) in employment would equal the change predicted by the national growth and industrial mix components; but since 1940 there have been very strong shifts in employment among regions in the United States. Actual changes in employment, therefore, deviate markedly from what is predicted on the basis of national growth and the industrial mix of a metropolitan area. These deviations arising from shifts from region to region constitute the "regional share component," and with this third component the actual change in employment is fully analyzed or "explained." One might add further refinements, but shift analysis, as at present utilized, stops here.

In this study, the technique of shift analysis is applied to the 46 major metropolitan areas for the periods 1940-1950 and 1950-1960. First, the importance of the industrial mix component is assessed. Secondly, the regional patterns that appear when the regional share component is calculated are broadly described. The national growth component's operation is readily apparent from an examination of Tables 10 and 11, and, therefore, it is not discussed here.

Industrial Mix

The "industry mix component" helps to explain the more rapid increase of employment in major metropolitan areas relative to national employment growth. From 1940 to 1960, 4.2 million jobs were lost in agriculture, a nonurban "industry." Some other nonurban industries, such as lumber products and mining, were also weak. In contrast, among urban industries only railroads and railway express showed consistent weakness in employment growth, but this entailed a loss of employment of only 0.2 million. Domestic services had a loss in 1940-1950 of 0.7 million but showed above-average growth in 1950-1960, hence its net effect over the 20 years was negligible. Thus, almost all major metropolitan areas showed a favorable industry mix of employment, both during the years 1940-1950 and during the years 1950-1960. The three exceptions during the 1940-1950 period, Memphis, Phoenix, and Birmingham, were due to special factors. Memphis and Birmingham in the Deep South were in the one section of the country in which domestic services were still widespread in 1940. The Phoenix SMSA is composed of one huge county, Maricopa County, and the urban population of this county was still rather small in 1940, at which time 22% of Phoenix's employment was in agriculture.

The median value for the industrial-mix component represents the advantage in industrial mix that major metropolitan areas have had relative to nonurban areas. Departures of the industrial mix component from the median value represent the advantage or disadvantage of a given metropolitan area relative to major metropolitan areas as a group. During the decade 1940-1950, the median was 1.0% and for 1950-1960 it was 0.8%. In both periods, the median was represented by New York, the "balanced" and largest major metropolitan area, as well as by five other major metropolitan areas with a population of more than 1.6 million. Departures from the median are more frequent and wider in the case of major metropolitan areas in size-class 4 (0.5 to 1.4 million).

Only five major metropolitan areas showed a significant advantage relative to other major metropolitan areas both from 1940 to 1950 and from 1950 to 1960. Four of these were military and governmental centers (Washington, San Diego, San Antonio, and Norfolk); one was a manufacturing center (Dayton).

Regional Share

The regional share component varies much more widely than the industrial mix component. From 1940 to 1950, Phoenix had a regional share component of 6.0%, while Albany and Boston, at the low end of the scale, had –1.8% and –1.6%, respectively. From 1950 to 1960, Norfolk and Albany had the lowest regional share components, –2.0% and –1.9% respectively, and Miami had the highest with 5.0%. A concentrated regional pattern was noticeable. In the case of two regions, the Northeast and the North Central, the regional share components are close to the typical value; Philadelphia's regional share component of –0.9% for 1950-1960 was fairly typical for the Northeast, and Detroit's regional share component of –0.5% was typical for the North Central region. In the case of major metropolitan areas in the South, there was no typical value. The three major metropolitan areas near, or on, Chesapeake Bay – Washington, Baltimore, and Norfolk –

had a negative regional share component. This suggests that the rapid growth experienced in this area since 1940 and earlier is due mainly to important additions to the already sizable armed forces and government employment in and around Washington. Louisville, Memphis, Birmingham, and New Orleans also have negative regional share components. Regional growth in the South has taken place to the east and west of these major metropolitan areas, in Atlanta, Miami, and Tampa, and in Dallas-Fort Worth, Houston, San Antonio, and Oklahoma City. Finally, the West also showed no typical regional share component. During the 1950-1960 period for example, Los Angeles, San Diego, Denver, Phoenix and Sacramento owed a considerable portion of their rapid growth to a sizable regional share component; San Francisco and Seattle received only a moderate boost from it; and Portland had a negative regional share component.

2. INCOME

There are currently three measures of income in major metropolitan areas. First, income data from the 1960 Census of Population cover all the SMSA's in existence at that date. This information is, however, based on self-reporting of income and, therefore, presents considerable problems of interpretation.[7] Secondly, the Office of Business Economics of the Department of Commerce is preparing estimates of personal income for selected years from 1929 to 1962 for all 231 SMSA's. Only partial results for 97 SMSA's have so far become available; these include only 18 of the 46 major metropolitan areas analyzed in this study. Thirdly, data for the 100 largest SMSA's, based on personal income tax returns, are published by the Internal Revenue Service. These data avoid the problems inherent in voluntary self-reporting of income and cover all the major metropolitan areas in this study, but they are not based on a consistent definition of the SMSA's. Since the data are not reported by county, the definitions used in the past could not be adjusted to correspond with current definitions of the SMSA's. Consequently, only data for 1963 and 1965 could be presented on a consistent basis. Thus, the examination of trends in the income of major metropolitan areas will have to await the completion of the Office of Business Economics project. In the meantime, the IRS data provide some useful information on income differentials.

a. Income Differences

Income differences are not insignificant. The highest per capita income in a major metropolitan area (San Francisco) is nearly double that of the lowest (San Antonio). The median per capita income in 1963 was $2,091, which was approximately the per capita income in Dallas-Fort Worth, Baltimore, and Columbus. There are sufficient regional differences to render the median atypical. Most major metropolitan areas in the Northeast, North Central, and West regions are above the median while only one major metropolitan area in the South (Washington) is above the median. Even within the South, a regional pattern is apparent. The low-income major metropolitan areas stretch along the gulf coast (San Antonio, Houston, and New Orleans), reach up north roughly along the Mississippi (Memphis, Louisville, and Birmingham) and continue into Florida. Dallas-Fort Worth, Baltimore, and Atlanta stand out. Their per capita income is at the median and compares with that of many major metropolitan areas in the remainder of the nation.

That the four military centers, Oklahoma City, San Diego, Norfolk, and San Antonio, are well below the median, may be explained by the sizable military income that is received in kind and does not enter into the IRS's "adjusted gross income." In the case of the three "leisure" centers, Miami, Tampa, and Phoenix, moderate retirement incomes are likely to reduce per capita "adjusted gross income" (especially since social security benefits are excluded from this concept); but these three centers also show low wages in manufacturing (see Table 13). Removal of these seven "special cases" narrows the range of income variations among major metropolitan areas but still leaves the highest area (San Francisco) with 55% higher income per capita than the lowest (New Orleans). It also raises the median income per capita by $88 to $2,179, represented by Sacramento.

The three large SCA's in size-class 1, New York, Los Angeles, and Chicago, as well as San Francisco and Washington in size-class 2, have per capita incomes that are well above the median. This is partly due to above-average "property income," but "earnings" are also somewhat above the median.

Once these five special cases – where large size seems to go with high per capita income – are removed, there is no evident relation between the size of a major metropolitan area and its earnings per capita. Twelve major metropolitan areas (aside from Washington and San Francisco) in size-classes 2 and 3 have per capita incomes closely grouped around the median of $2,091 approximated by Dallas-Fort Worth and Baltimore;[8] the per capita income of one, Houston, is substantially below the median. The 31 major metropolitan areas in size-class 4 show substantial departures from the median but are neither concentrated above the median, nor below it.

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[7] It is also based on the 1959 definitions of SMSA's and cannot be revised to fit the 1964 definitions.

b. Manufacturing Wage Differences

The pattern of manufacturing wages departs in some important respects from the pattern of income established above. Consistent with these income data, manufacturing wages are lowest in the major metropolitan areas in the South. But in six out of seven major metropolitan areas in Megalopolis (the exception being Hartford), manufacturing wages are well below the median. New York, for example, which had the third highest income, is 36th in terms of manufacturing wages. The average manufacturing wage in Providence, $2.28 per hour, is comparable to that of the southern metropolitan areas which have the lowest manufacturing wages (Tampa, Norfolk, Miami, and San Antonio).

The major metropolitan areas in the West generally have both manufacturing wages and per capita incomes that are above the median, but in the midwest manufacturing belt, manufacturing wages tend to rank much higher than per capita income. For example, the highest manufacturing wages are found in Detroit, which is only 16th with respect to income per capita. Akron, Dayton, Youngstown, Toledo, Pittsburgh, Buffalo, Milwaukee, and Cleveland are all well above the median with respect to manufacturing wages, but at the median or below it with respect to income per capita. With the exception of Cleveland, these major metropolitan areas are heavily specialized in one branch of manufacturing. Chicago, which is not specialized, is seventh with respect to income per capita but twentieth with respect to manufacturing wages. Thus, the major metropolitan areas that have "specialized" in a branch of manufacturing often tend to rank relatively high with regard to average manufacturing wages.

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[8] Income for New England SEA's on a per capita basis is not available from the IRS data, but an estimate given in the Office of Business Economics data on personal income for the New England SEA's shows that Boston is above the median, but close to it; Hartford, very far above the median; and Providence, below the median.

IV. Basic Data

THE TWO BASIC UNITS for measuring metropolitan areas are "urbanized areas" and "standard metropolitan statistical areas" (SMSA's). These two concepts were first used extensively in the 1950 Censuses of Population and Housing, in which they replaced the "metropolitan districts" used in the 1940 Census of Population. These consisted of a "central city" with a population of more than 50,000, and of the contiguous minor subdivisions (those below county level) which had a minimum population density (in nearly all cases) of 150 inhabitants per square mile. The metropolitan district was unsatisfactory for two reasons: (1) it did not include some unincorporated built-up areas, and (2) the multitude of minor civil subdivisions, with frequently changing boundaries, made the computation and updating of metropolitan districts a lengthy operation. Besides, in the United States, the county is the only unit of government smaller than the state whose boundaries are rarely changed. Townships, municipalities, wards, etc., have frequent boundary changes, therefore they cannot be used as bases for historical comparisons.[1]

It must, however, be remembered that in 1940 aerial mapping was still in its infancy, and, therefore, the procedure followed for designating metropolitan districts was, at that time, the only feasible method of obtaining an approximation of the *built-up* metropolitan area.

Aerial mapping of the population centers facilitated the decennial population count. The natural outgrowth is the designation of urbanized areas. These include a central city of 50,000 population or more, plus all contiguous territory with a population density exceeding 1,000. In the computation of this population density, land used for many types of nonresidential uses, such as railroad yards, cemeteries, etc., is not counted. Therefore, the criterion of 1,000 inhabitants per square mile roughly approximates "residential density."

The urbanized area is a very important concept because it is the most direct measure of the "city" available at present. This century's technological change – particularly the switch to auto transportation, the most significant technological change from the point of view of urban areas – has produced cities that differ radically from the cities of the nineteenth century; hence, a whole new spate of definitions of the city has arisen. Nevertheless, the age-old definition that a city is a "grouping of dwellers in order to live better" probably remains as the one definition which is most acceptable to all parties. The criterion that corresponds to this definition is stated in terms of population density, which is also the criterion for the urbanized area.

The concept of the urbanized area has not been frequently used, however, because, at present, observations are available only for two dates, 1950 and 1960. Were the population census to be held more frequently – every five years, as is now proposed – urbanized areas might become a more familiar tool.

The standard metropolitan statistical area, in contrast, is a much more widely used statistical tool. Its great merit is convenience. It is composed of counties. Since many types of data are collected by county (or may easily be assembled on this basis), a very large amount of data on metropolitan areas are directly available by SMSA classification, or may be readily assembled on this basis.

The counties that make up the standard metropolitan statistical area are selected in the following fashion: (1) the county that contains a "central city or cities" of over 50,000 population is the central county of the SMSA, and (2) additional counties are added to the central county if they are "urban" and "integrated" with the central county. The "urban" criterion is met if at least 50% of the population is residing at a population density of more than 500 persons per square mile.

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[1] But the county often is too large a unit for fine analyses of particular areas. To solve this problem, the Bureau of the Census has designated Census Tracts (see Glossary) in urban areas, and Census County Divisions elsewhere. These areas have no legal status and therefore may be somewhat artificial, but the Bureau of the Census tries to maintain them unchanged from year to year so that historical comparisons can be made.

"Integration" is determined by a sample of commuting patterns between central and outlying counties.[2]

At present, the chief difficulty with statistics based on standard metropolitan statistical areas is that the definition of many SMSA's has been changed (in terms of the counties of which they are composed). The major revisions occurred in 1959 and 1964. In fact, in the light of subsequent data, the first definition was generally too conservative, and a large number of counties has been added in most subsequent revisions. Although SMSA's now present a more realistic picture of metropolitan areas – corresponding more closely to the commuting pattern across county lines as revealed by the 1960 Census of Population – the various revisions have destroyed the internal comparability of the statistics on SMSA's that have appeared in Federal statistical publications over the years.

In order to secure comparisons over time of the same metropolitan area, it is usually necessary to reconstruct a consistently defined SMSA from the underlying county data, which are usually available.[3]

One principal purpose of the following tables is to present basic data, such as population and employment (Tables 1 and 2, 10 and 11) in a form that allows a maximum of comparisons. For the time being, the comparability of statistics available from published sources is limited, because the definition of the basic unit, the SMSA, has been changed several times.

Except for Tables 7, 8, and 13, all tables are based on the 1964 census definition of SMSA's and are internally consistent. Tables 7 and 8 – distribution of employment by industry – are based on the "labor markets" of the Bureau of Labor Statistics (one of the few Federal statistical agencies operating with its own definition of metropolitan areas). Labor markets are composed of counties, as are SMSA's, but in some cases one or two outlying counties of the SMSA are left out. These usually contain only a very small share of the labor force. The data on Table 13, *Average Hourly Earnings in Manufacturing,* are also based on "labor markets." These three tables, therefore, provide valuable information for the analysis in the text of this study, but are not strictly consistent with the coverage of the other tables.

Finally, a word is needed about SCA (Standard Consolidated Area) and SEA (State Economic Area). In the case of some extensive urbanized areas, the pattern of commuting to work does not provide a positive criterion of integration for all the counties over which these continuous built-up areas extend. But while the criterion of commuting-to-work patterns is at present of primary importance in the United States, it may not be so at other times in other places.[4] Therefore, the criterion of commuting-to-work should not override the criterion of population density, wherever they are in conflict. This has been recognized in two cases by the U. S. Bureau of the Budget: the Chicago standard consolidated area (formed out of 2 SMSA's) and the New York standard consolidated area (formed out of 4 SMSA's). But there are at least three other cases of extensive urbanized areas which contain two or more SMSA's, but which the Census Bureau has not consolidated; (1) San Francisco, (2) Los Angeles, and (3) Dallas-Fort Worth. In the following tables and in the analysis in the text, wherever an urbanized area extends over more than one SMSA, the SMSA's involved are consolidated into one SCA.

The reason for the use of the state economic area (SEA) is that in New England the county has no legal existence and, therefore, the U. S. Bureau of the Budget has declined to define the New England SMSA's in terms of the "county equivalents" for which several Federal statistical agencies collect data in New England. The legal unit of government in New England, the town, is used as the base for the definition of New England SMSA's. This, however, vitiates one of the principal merits of the SMSA concept, its convenience. Thus, the Boston SMSA definition is a list of 77 towns. Not only is the task of aggregation considerable, but a further inconvenience is that much fewer data are available for many of the small towns contained in this SMSA definition than are available for "county equivalents."

The state economic area is an aggregate of counties with similar social and economic characteristics, as is the SMSA. In many cases, Federal statistical agencies have presented data for New England metropolitan areas on the basis of the SEA because of the difficulty or impossibility of presenting the data on the basis of the U. S.

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[2] The criteria of integration have been simplified to include commuting only; previously, other items such as telephone calls and charge accounts at central retail stores were also used.

[3] In some cases (e.g., the IRS estimates of income of 100 largest SMSA's), consistent SMSA data cannot be reconstructed from county data.

[4] E.g., while the tendency in the West has been for increased separation of place of work and place of residence and increased commuting, in Russia there has been a determined effort to locate workers' housing close to factories in order to save the resources that otherwise would be needed for intra-urban transportation. Obviously, the commuting-to-work criterion in these circumstances is of limited value. The same holds true of traditional societies where separation of residence and place of work may be rare.

Bureau of the Budget's definition. This practice has been followed in this study.

The following 13 tables fall into four broad groups. Tables 1 to 4 – the most basic ones – deal with population, land area, and population densities. Tables 5 and 6 cover housing (Table 5 summarizes the most important statistics from the Housing Census of 1960; Table 6 deals with residential construction from 1961 to 1966 by major metropolitan area). Tables 7, 8, 10, and 11 cover employment (Tables 7 and 8, its distribution by industry; Tables 10 and 11, trends in total employment). Finally, Tables 12 and 13 deal with income.

Statistical Tables

POPULATION GROWTH, NATURAL INCREASE, AND MIGRATION IN SMSA's AND SCA's, 1960-1965

TABLE 1:

	Population, 1960 (Thousands) (1)	Change, 1960-1965			Annual Growth Rate, 1960-1965			Addendum: Population Growth Rate 1940-1965 (Per Cent) (8)
		Total (Thousands) (2)	Natural Increase (Thousands) (3)	Net Migration (Thousands) (4)	Total (Per Cent) (5)	Natural Increase (Per Cent) (6)	Net Migration (Per Cent) (7)	
New York, N. Y.-N. J. (SCA)	14,759	1,062	783	279	1.4	1.0	0.4	1.3
Los Angeles, Calif. (SCA)	6,743	1,129	509	620	3.2	1.4	1.7	4.3
Chicago, Ill.-Ind. (SCA)	6,794	490	493	− 3	1.4	1.4	*	1.6
Philadelphia, Pa.-N. J.	4,343	321	261	60	1.4	1.2	0.3	1.8
Detroit, Mich.	3,762	225	280	− 50	1.2	1.4	−0.3	2.2
San Francisco, Calif. (SCA)	3,291	512	241	271	2.9	1.4	1.4	3.7
Boston, Mass. (SEA)	3,109	96	181	− 85	0.6	1.2	−0.5	0.8
Washington, D. C.-Md.-Va.	1,989	419	197	222	3.9	1.9	2.1	3.9
Pittsburgh, Pa.	2,405	−33	110	−143	−0.3	0.9	−1.2	0.9
St. Louis, Mo.-Ill.	2,105	144	147	− 3	1.4	1.4	*	1.6
Cleveland, Ohio	1,909	91	120	− 29	1.0	1.3	−0.3	1.8
Dallas-Fort Worth, Tex. (SCA)	1,657	259	146	113	3.2	1.7	1.4	4.6
Baltimore, Md.	1,727	127	123	4	1.4	1.4	*	2.0
Houston, Tex.	1,418	278	139	139	3.7	1.8	1.8	4.5
Minneapolis-St. Paul, Minn.	1,482	130	137	− 7	1.7	1.7	−0.1	2.4
Cincinnati, Ohio-Ky.-Ind.	1,268	79	94	− 15	1.2	1.4	−0.2	1.6
Buffalo, N. Y.	1,307	13	78	− 65	0.2	1.2	−0.9	1.2
Milwaukee, Wis.	1,233	42	95	− 53	0.7	1.5	−0.8	2.0
Atlanta, Ga.	1,017	199	93	106	3.6	1.7	1.9	3.5
Kansas City, Mo.-Kans.	1,093	90	81	9	1.5	1.4	0.2	2.1
Seattle, Wash.	1,107	72	73	− 1	1.3	1.3	*	3.1
San Diego, Calif.	1,033	103	93	10	1.9	1.7	0.2	5.8
Denver, Col.	929	144	83	61	2.9	1.7	1.3	3.9
Miami, Fla.	935	126	50	76	2.6	1.1	1.5	5.6
San Bernardino-Riverside, Calif.	810	216	66	150	4.9	1.5	3.4	7.6
New Orleans, La.	907	120	76	44	2.5	1.6	1.0	2.4
Indianapolis, Ind.	917	67	75	− 8	1.4	1.5	−0.2	2.0
Portland, Ore.-Wash.	822	75	39	36	1.8	1.1	0.8	5.3
Tampa, Fla.	772	101	24	77	2.5	0.6	1.9	5.3
Columbus, Ohio	755	92	65	27	2.3	1.6	0.8	3.1
Phoenix, Ariz.	664	154	65	90	4.3	1.8	2.6	7.2
San Antonio, Tex.	716	92	76	16	2.5	2.0	0.4	3.5
Rochester, N. Y.	733	71	47	24	1.9	1.3	0.7	1.6
Dayton, Ohio	727	64	56	8	1.7	1.5	0.2	3.2
Louisville, Ky.-Ind.	725	46	54	− 8	1.3	1.4	−0.2	2.3
Hartford, Conn. (SEA)	690	75	48	27	2.1	1.4	0.8	2.1
Memphis, Tenn.-Ark.	675	65	60	5	1.8	1.7	0.1	2.8
Providence, R. I. (SEA)	719	20	35	− 15	0.6	1.0	−0.4	1.0
Sacramento, Calif.	626	111	55	56	3.4	1.7	1.7	5.6
Albany, N. Y.	657	40	31	9	1.2	0.9	0.3	1.0
Toledo, Ohio-Mich.	631	26	40	− 14	0.8	1.3	−0.5	1.4
Akron, Ohio	605	45	44	1	1.4	1.4	*	2.0
Birmingham, Ala.	635	9	39	− 30	0.3	1.2	−0.9	1.5
Norfolk, Va.	578	59	61	− 2	1.9	1.9	*	3.7
Syracuse, N. Y.	564	42	42	*	1.4	1.4	*	1.8
Oklahoma City, Okla.	512	83	46	27	2.7	1.7	1.0	3.5
Honolulu, Hawaii	500	71	65	6	2.7	2.5	0.2	n.a.
Youngstown, Ohio	509	14	29	− 15	0.5	1.2	−0.6	1.5

* A range of less than 0.05%.

Source: U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 371.

CHANGES IN AREA, POPULATION, AND DENSITY OF URBANIZED AREAS, 1950-1960a

TABLE 2.

	1950b			Annual Growth Rates, 1950-1960		
	Area (Square Miles) (1)	Population (Thousands) (2)	Density (Inhabitants per Square Mile) (3)	Area (Per Cent) (4)	Population (Per Cent) (5)	Density (Per Cent) (6)
New York, N. Y.-N. J. (SCA)	1,253	12,296	9,810	4.2	1.4	−2.7
Los Angeles, Calif. (SCA)	871	3,997	4,587	4.6	5.0	0.3
Chicago, Ill.-Ind. (SCA)	708	4,291	6,954	3.1	1.9	−1.2
Philadelphia, Pa.-N. J.	312	2,922	9,379	6.8	2.3	−4.2
Detroit, Mich.	423	2,752	6,510	5.6	3.6	−3.0
San Francisco, Calif. (SCA)	348	2,199	6,319	8.6	3.3	−5.0
Boston, Mass. (SEA)	345	2,233	6,478	4.1	0.8	−3.2
Washington, D. C.-Md.-Va.	178	1,287	7,216	6.7	3.5	−3.0
Pittsburgh, Pa.	254	1,533	6,045	7.6	1.7	−5.5
St. Louis, Mo.-Ill.	228	1,401	6,150	3.6	1.8	−1.7
Cleveland, Ohio	300	1,384	4,610	7.0	2.6	−4.1
Dallas-Fort Worth, Tex. (SCA)	262	855	3,265	13.4	5.3	−7.2
Baltimore, Md.	152	1,162	7,654	3.8	2.0	−1.7
Houston, Tex.	270	701	2,594	4.7	5.0	0.2
Minneapolis-St. Paul, Minn.	231	987	4,274	11.1	3.4	−6.9
Cincinnati, Ohio-Ky.-Ind.	146	813	5,567	5.2	2.0	−3.0
Buffalo, N. Y.	123	896	7,300	2.7	1.7	−1.0
Milwaukee, Wis.	102	829	8,156	14.4	3.4	−9.8
Atlanta, Ga.	106	508	4,814	8.8	4.2	−4.2
Kansas City, Mo.-Kans.	149	698	4,687	6.6	2.8	−3.5
Seattle, Wash.	123	622	5,057	6.9	3.4	−3.2
San Diego, Calif.	133	433	3,265	7.6	6.8	−0.7
Denver, Col.	105	499	4,741	4.7	4.9	0.2
Miami, Fla.	117	459	3,937	4.6	6.4	1.7
San Bernardino-Riverside, Calif.	61	136	2,244	10.9	10.8	−0.1
New Orleans, La.	222	660	2,971	1.8	2.5	0.7
Indianapolis, Ind.	91	502	5,545	4.8	2.4	−2.2
Portland, Ore.-Wash.	114	513	4,517	5.4	2.4	−2.8
Tampa, Fla.	111	294	2,658	7.1	7.9	0.7
Columbus, Ohio	65	438	6,786	8.5	3.5	−4.5
Phoenix, Ariz.	55	216	3,921	16.3	9.9	−5.5
San Antonio, Tex.	90	450	5,011	8.0	3.6	−3.9
Rochester, N. Y.	65	409	6,334	5.7	1.9	−3.6
Dayton, Ohio	63	347	5,541	7.1	3.8	−3.1
Louisville, Ky.-Ind.	67	473	7,098	7.4	2.5	−4.5
Hartford, Conn. (SEA)	53	301	5,686	9.5	2.4	−6.5
Memphis, Tenn.-Ark.	110	406	3,705	3.6	3.0	−0.6
Providence, R. I. (SEA)	143	583	4,091	2.8	1.2	−1.5
Sacramento, Calif.	42	212	5,091	12.8	7.9	−3.9
Albany, N. Y.	72	415	5,758	4.0	1.0	−3.0
Toledo, Ohio-Mich.	70	364	5,220	6.8	1.8	−4.7
Akron, Ohio	98	367	3,731	3.7	2.3	−1.4
Birmingham, Ala.	101	445	4,431	4.6	1.6	−2.8
Norfolk, Va.	62	385	6,172	5.7	2.8	−2.7
Syracuse, N. Y.	44	265	6,085	4.5	2.3	−2.1
Oklahoma City, Okla.	67	275	4,106	19.1	4.6	−12.3
Honolulu, Hawaii	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Youngstown, Ohio	79	298	3,778	3.2	2.3	−0.9

n a.—Not available.

a Urbanized Areas include a central city of more than 50,000 population and all contiguous areas with more than 1,000 inhabitants per square mile.

b For 1960 population, see Table 3, column 2; for 1960 area and population density, see Table 4, columns 2 and 3.

Source: 1950 and 1960 Censuses of Population.

TABLE 3:

DISTRIBUTION OF POPULATION WITHIN SMSA's AND SCA's, 1960

	SMSA	Urbanized Areas 1		Core City		Suburbs		Exurbs	
	(Thousands) (1)	(Thousands) (2)	(Per Cent of SMSA) (3)	(Thousands) (4)	(Per Cent of SMSA) (5)	(Thousands) (6)	(Per Cent of SMSA) (7)	(Thousands) (8)	(Per Cent of SMSA) (9)
New York, N. Y.-N. J. (SCA)	14,759	14,115	95.6	7,782a	52.7a	6,333	42.9	646	4.4
Los Angeles, Calif. (SCA)	6,743	6,489	96.3	2,479a	36.8a	4,010	59.5	254	3.8
Chicago, Ill.-Ind. (SCA)	6,795	5,959	87.8	3,550a	52.3a	2,409	35.5	835	12.4
Philadelphia, Pa.-N. J.	4,343	3,626	83.5	2,003a	46.1a	1,623	37.4	707	16.4
Detroit, Mich.	3,762	3,536	94.0	1,670a	44.4a	1,866	49.6	226	6.0
San Francisco, Calif. (SCA)	3,291	2,929	89.0	743a	22.6a	2,186	66.4	363	11.0
Boston, Mass. (SEA)	3,109	2,385	76.7	801a	25.8a	1,584	50.9	724	23.4
Washington, D. C.-Md.-Va.	1,989	1,808	90.9	764a	38.4a	1,044	52.5	181	9.1
Pittsburgh, Pa.	2,405	1,804	75.0	604a	25.1a	1,200	49.9	601	25.0
St. Louis, Mo.-Ill.	2,105	1,668	79.2	750a	35.6a	918	43.6	437	20.7
Cleveland, Ohio	1,909	1,761	92.2	876a	45.9a	885	46.3	149	7.8
Dallas-Fort Worth, Tex. (SCA)	1,657	1,435	86.6	1,036	62.5	399	24.1	222	13.4
Baltimore, Md.	1,727	1,419	82.2	939a	54.4a	480	27.8	308	17.8
Houston, Tex.	1,418	1,139	80.3	938	66.1	201	14.2	278	19.7
Minneapolis-St. Paul, Minn.	1,482	1,377	92.9	796a	53.7a	581	39.2	104	7.1
Cincinnati, Ohio-Ky.-Ind.	1,268	994	78.3	593a	39.6a	491	38.7	275	21.7
Buffalo, N. Y.	1,307	1,055	80.7	533a	40.8a	522	39.9	252	19.3
Milwaukee, Wis.	1,233	1,148	93.1	741	60.1	407	33.0	84	6.8
Atlanta, Ga.	1,017	768	75.5	487	47.9	281	27.6	249	24.5
Kansas City, Mo.-Kans.	1,093	922	84.3	476	43.5	446	40.8	171	15.7
Seattle, Wash.	1,107	864	78.0	557	50.3	307	27.7	243	22.0
San Diego, Calif.	1,033	836	80.9	573	55.5	263	25.4	197	19.0
Denver, Col.	929	804	86.4	494	53.1	310	33.3	125	13.5
Miami, Fla.	935	853	91.2	292a	31.2a	561	60.0	83	8.9
San Bernardino-Riverside, Calif.	810	377	46.7	176	21.8	201	24.9	432	53.4
New Orleans, La.	907	846	93.2	628	69.2	218	24.0	62	6.8
Indianapolis, Ind.	917	639	69.7	476	51.9	163	17.8	277	30.3
Portland, Ore.-Wash.	822	652	79.2	373a	45.3a	279	33.9	170	20.7
Tampa, Fla.	772	627	81.1	275	35.6	352	45.5	146	18.9
Columbus, Ohio	755	616	81.7	471	62.4	145	19.3	138	18.3
Phoenix, Ariz.	664	552	83.2	439	66.2	113	17.0	111	16.9
San Antonio, Tex.	716	1,130	89.7	588a	82.1a	542	7.6	74	10.4
Rochester, N. Y.	733	494	67.4	319a	43.5a	175	23.9	239	32.7
Dayton, Ohio	727	501	69.0	262	36.1	239	32.9	226	31.0
Louisville, Ky.-Ind.	725	607	83.7	391	53.9	216	29.8	119	16.3
Hartford, Conn. (SEA)	690	513	74.4	162a	23.5a	351	50.9	177	25.6
Memphis, Tenn.-Ark.	675	545	80.8	498	73.8	47	7.0	130	14.7
Providence, R. I. (SEA)	719	613	85.3	207a	28.9a	406	56.4	105	19.3
Sacramento, Calif.	626	452	72.2	192	30.6	260	41.6	174	27.7
Albany, N. Y.	658	456	69.2	130a	19.7a	326	49.5	202	30.7
Toledo, Ohio-Mich.	631	438	69.5	318	50.4	120	19.1	192	30.5
Akron, Ohio	605	458	75.7	290a	48.0a	168	27.7	148	24.3
Birmingham, Ala.	635	521	82.1	341	53.7	180	28.4	114	17.9
Norfolk, Va.	579	508	87.8	306	52.9	202	34.9	71	12.2
Syracuse, N. Y.	564	333	59.1	216a	38.3a	117	20.8	230	40.8
Oklahoma City, Okla.	512	429	83.9	324	63.4	105	20.5	83	16.2
Honolulu, Hawaii	500	351	70.2	294	58.8	57	11.4	149	29.8
Youngstown, Ohio	509	373	73.2	167a	32.7a	206	40.5	137	26.8

Note: The core city is the city with a population of 50,000 or more and the largest central business district as measured by size of retail sales, with the exception of the following pairs of twin cities: Dallas-Fort Worth, Minneapolis-St. Paul, and San Bernardino-Riverside. The suburbs are composed of the Urbanized Area exclusive of the core city, and the exurbs, of the SMSA or SCA exclusive of its entire Urbanized Area.

1 In the following cases, the SMSA or SCA, as well as its Urbanized Area, as shown here, excludes one or more adjacent (contiguous) Urbanized Areas: New York SCA excludes Stamford, Norwalk, Bridgeport, and New Haven; Philadelphia SMSA excludes Wilmington and Trenton; San Francisco SCA excludes Vallejo; Cincinnati SMSA excludes Hamilton; Miami SMSA excludes Ft. Lauderdale-Hollywood and West Palm Beach; Norfolk SMSA excludes Newport News-Hampton. (Among these, the exclusions in the cases of Miami and Norfolk result in an understatement of population by a sizable portion.)

a Core city area has expanded less than 5% since 1940. Therefore, these core cities as a rule include few suburbs built after 1940, and are more representative of the core.

Source: U.S. Bureau of the Census, 1960 Census of Population.

TABLE 4: LAND AREA AND POPULATION DENSITY: SMSA, URBANIZED AREA, CORE CITY, AND SUBURBS, 1960

	SMSA	Urbanized Area 1		Core City			Suburbs		
		Area	Density	Area		Density	Area		Density
	(Square Miles) (1)	(Square Miles) (2)	Inhabitants per Square Mile (3)	(Square Miles) (4)	Per Cent of Urbanized Area (5)	Inhabitants per Square Mile (6)	(Square Miles) (7)	Per Cent of Urbanized Area (8)	Inhabitants per Square Mile (9)
New York, N. Y.-N. J. (SCA)	3,471	1,892	7,462	315a	16.6a	24,697	1,593	83.3	4,017
Los Angeles, Calif. (SCA)	4,842	1,370	4,736	455a	33.2a	5,451	915	66.8	4,381
Chicago, Ill.-Ind. (SCA)	4,653	960	6,209	224a	23.4a	15,836	736	76.6	3,274
Philadelphia, Pa.-N. J.	3,549	597	6,092	127a	21.3a	15,743	470	78.7	3,456
Detroit, Mich.	1,965	732	4,834	140a	19.1a	11,964	592	80.9	3,153
San Francisco, Calif. (SCA)	3,788	795	3,817	48a	6.0a	15,553	747	94.0	3,018
Boston, Mass. (SEA)	1,782	516	4,679	48a	9.3a	14,586	468	90.7	3,444
Washington, D. C.-Md.-Va.	1,475	341	5,308	61a	18.0a	12,442	279	82.0	3,740
Pittsburgh, Pa.	3,051	525	3,437	54a	10.3a	11,171	471	89.7	2,548
St. Louis, Mo.-Ill.	4,119	323	5,160	61a	18.9a	12,296	262	81.1	3,500
Cleveland, Ohio	1,519	587	3,042	81a	13.8a	10,789	506	86.2	1,798
Dallas-Fort Worth, Tex. (SCA)	5,253	920	1,560	420	45.7	2,464	499	54.3	799
Baltimore, Md.	1,807	220	6,441	79a	35.9a	11,886	141	64.1	3,396
Houston, Tex.	6,258	431	2,647	328	76.2	2,860	102	23.8	1,967
Minneapolis-St. Paul, Minn.	2,111	657	2,095	109a	16.5a	7,326	549	83.5	1,059
Cincinnati, Ohio-Ky.-Ind.	2,154	242	4,101	77a	31.9a	6,501	165	68.1	2,976
Buffalo, N. Y.	1,587	160	6,582	39a	24.6a	13,522	121	75.4	4,318
Milwaukee, Wis.	1,102	392	2,934	91	23.2	8,137	301	76.8	1,354
Atlanta, Ga.	1,723	246	3,125	128	52.2	3,802	118	47.8	2,387
Kansas City, Mo.-Kans.	2,760	282	3,262	130	46.0	3,664	153	54.0	2,920
Seattle, Wash.	4,234	238	3,626	89	37.1	6,295	150	62.9	2,050
San Diego, Calif.	4,255	276	3,033	192	69.8	2,979	83	30.2	3,157
Denver, Col.	3,665	167	4,824	71	42.6	6,956	96	57.3	3,240
Miami, Fla.	2,054	183	4,657	34a	18.7a	8,529	149	81.3	3,768
San Bernardino-Riverside, Calif.	27,308	169	2,229	25	14.9	3,683	144	85.1	1,397
New Orleans, La.	2,026	267	3,172	199	74.6	3,157	68	25.4	3,216
Indianapolis, Ind.	2,655	145	4,412	71	49.1	6,689	74	50.9	2,213
Portland, Ore.-Wash.	3,657	192	3,387	67a	34.9a	5,549	125	65.1	2,228
Tampa, Fla.	1,304	219	2,867	85	38.9	3,235	134	61.1	2,632
Columbus, Ohio	1,484	145	4,259	89	61.5	5,296	56	38.5	2,606
Phoenix, Ariz.	9,226	248	2,222	187	75.4	2,343	61	24.6	1,850
San Antonio, Tex.	1,962	192	3,337	161a	83.4a	3,662	32	16.6	1,700
Rochester, N. Y.	2,314	113	4,355	36a	32.1a	8,753	77	67.9	2,273
Dayton, Ohio	4,029	125	4,029	34	27.0	7,808	91	73.0	2,633
Louisville, Ky.-Ind.	908	136	4,474	57	42.1	6,841	79	57.9	2,752
Hartford, Conn. (SEA)	740	131	2,909	17a	13.3a	9,321	114	86.7	1,938
Memphis, Tenn.-Ark.	1,374	156	3,497	128	82.3	3,881	28	17.7	1,708
Providence, R. I. (SEA)	619	188	3,508	18a	9.5a	11,592	170	90.5	2,658
Sacramento, Calif.	3,441	134	3,373	45	33.7	4,250	89	66.3	3,925
Albany, N. Y.	2,219	106	4,281	19a	17.9a	6,828	87	82.1	3,727
Toledo, Ohio-Mich.	1,523	135	3,249	48	35.7	6,598	87	64.3	1,387
Akron, Ohio	917	141	3,243	54a	38.1a	5,387	87	61.9	1,921
Birmingham, Ala.	1,118	157	3,325	75	47.5	4,576	82	52.5	2,193
Norfolk, Va.	590	109	4,676	50	46.0	6,117	59	54.0	3,446
Syracuse, N. Y.	2,421	68	4,923	25a	36.9a	8,642	43	63.1	2,746
Oklahoma City, Okla.	2,137	385	1,114	322	83.5	1,009	64	16.5	1,647
Honolulu, Hawaii	598	100	3,520	84	84.1	3,506	16	15.9	3,593
Youngstown, Ohio	1,029	108	3,451	33a	30.7a	5,021	75	69.3	2,755

Note: The core city is the city with a population of 50,000 or more and the largest central business district as measured by size of retail sales, with the exception of the following pairs of twin cities: Dallas-Fort Worth, Minneapolis-St. Paul, and San Bernardino-Riverside. The suburbs are composed of the Urbanized Area exclusive of the core city, and the exurbs, of the SMSA or SCA exclusive of its entire Urbanized Area.

1 In the following cases, the SMSA or SCA, as well as its Urbanized Area, as shown here, excludes one or more adjacent (contiguous) Urbanized Areas: New York SCA excludes Stamford, Norwalk, Bridgeport, and New Haven; Philadelphia SMSA excludes Wilmington and Trenton; San Francisco SCA excludes Vallejo; Cincinnati SMSA excludes Hamilton; Miami SMSA excludes Ft. Lauderdale-Hollywood and West Palm Beach; Norfolk SMSA excludes Newport News-Hampton. (Among these, the exclusions in the cases of Miami and Norfolk result in an understatement of population by a sizable proportion.)

a Core city area has expanded less than 5% since 1940. Therefore, these core cities as a rule include few suburbs built after 1940, and are more representative of the core.

Source: U.S. Bureau of the Census, 1960 Census of Population.

HOUSING IN URBANIZED AREAS, 1960

TABLE 5:

	Housing Units by Type of Structure								
	Total (Thousands) (1)	Trailers and 1-Family Detached (Per Cent of Total) (2)	1-4 Family Attached (Per Cent of Total) (3)	5 or More Family (Per Cent of Total) (4)	Housing Units Built 1939 or Earlier (Per Cent of Total) (5)	Vacancy Rate (Per Cent of Total) (6)	Occupancy (Persons per Unit) (7)	Overcrowded Housing 1 (Per Cent of Occupied Units) (8)	Rented Housing (Per Cent of Occupied Units) (9)
New York, N. Y.-N. J. (SCA)	4,687	28.0	27.3	44.6	71.5	3.9	3.1	10.1	62.0
Los Angeles, Calif. (SCA)	2,281	65.8	16.7	17.5	39.2	6.1	3.0	4.0	39.2
Chicago, Ill.-Ind. (SCA)	1,912	39.7	32.3	28.0	70.1	4.4	3.2	11.0	51.2
Philadelphia, Pa.-N. J.	1,129	29.3	62.0	8.7	68.3	4.6	3.3	6.5	30.8
Detroit, Mich.	1,086	69.4	20.0	10.6	53.5	5.9	3.4	9.7	29.5
San Francisco, Calif. (SCA)	1,048	56.0	22.8	21.1	51.3	5.5	2.9	7.4	44.6
Boston, Mass. (SEA)	760	39.4	43.3	17.3	80.0	4.5	3.2	6.5	49.9
Washington, D. C.-Md.-Va.	570	40.2	26.9	32.8	39.4	4.1	3.2	9.4	52.8
Pittsburgh, Pa.	562	60.2	30.4	9.4	68.3	3.7	3.3	9.0	37.3
St. Louis, Mo.-Ill.	539	57.7	30.7	11.7	65.0	4.6	3.2	13.8	41.3
Cleveland, Ohio	558	57.3	28.9	13.8	63.6	4.3	3.3	7.8	38.5
Dallas-Fort Worth, Tex. (SCA)	481	76.6	15.7	7.6	32.5	8.6	3.2	11.4	33.8
Baltimore, Md.	429	29.1	63.7	7.1	56.9	5.0	3.4	9.2	37.8
Houston, Tex.	374	78.0	14.4	7.6	30.6	9.7	3.3	12.7	36.1
Minneapolis-St. Paul, Minn.	432	64.4	20.0	15.0	59.5	4.2	3.3	9.4	32.7
Cincinnati, Ohio-Ky.-Ind.	322	50.2	35.0	14.8	68.5	5.0	3.2	13.8	45.3
Buffalo, N. Y.	331	44.7	45.7	9.6	69.7	4.3	3.3	6.7	43.0
Milwaukee, Wis.	359	51.2	37.1	11.6	61.9	4.0	3.3	8.3	42.3
Atlanta, Ga.	236	61.6	23.9	14.5	42.9	5.0	3.3	13.7	44.6
Kansas City, Mo.-Kans.	316	67.8	15.6	16.6	60.3	5.9	3.1	9.2	35.5
Seattle, Wash.	308	69.4	9.7	20.9	50.0	7.0	3.0	5.7	35.7
San Diego, Calif.	276	68.9	18.4	12.7	29.5	8.8	3.1	10.0	42.6
Denver, Col.	263	66.0	17.2	16.8	44.2	5.1	3.1	9.2	39.1
Miami, Fla.	323	60.1	15.9	24.0	26.3	11.3	2.9	9.7	40.8
San Bernardino-Riverside, Calif.	125	84.8	10.8	4.4	30.7	9.1	3.2	8.9	31.0
New Orleans, La.	264	43.2	43.3	13.4	56.2	6.3	3.4	18.5	54.0
Indianapolis, Ind.	207	66.0	22.5	11.5	63.0	5.1	3.2	11.7	37.3
Portland, Ore.-Wash.	232	75.5	9.6	14.8	56.5	5.9	2.9	5.6	31.8
Tampa, Fla.	247	78.6	13.6	7.8	37.2	8.9	2.8	8.1	26.9
Columbus, Ohio	195	62.0	26.7	11.3	54.8	6.0	3.2	9.4	42.3
Phoenix, Ariz.	178	81.2	13.2	5.5	20.2	8.6	3.3	13.3	32.7
San Antonio, Tex.	184	78.0	15.8	6.2	43.2	7.2	3.6	20.8	36.7
Rochester, N. Y.	158	58.3	29.4	12.3	74.8	3.7	3.1	5.5	36.1
Dayton, Ohio	154	70.6	21.4	7.9	47.9	4.7	3.4	10.6	34.6
Louisville, Ky.-Ind.	191	69.5	22.0	8.4	57.4	5.4	3.3	14.5	37.6
Hartford, Conn. (SEA)	154	43.9	34.0	22.1	62.6	3.8	3.2	4.4	45.3
Memphis, Tenn.-Ark.	164	66.8	23.6	9.6	45.0	4.9	3.4	16.6	42.7
Providence, R. I. (SEA)	217	46.5	44.4	9.1	75.2	6.4	3.2	6.6	45.2
Sacramento, Calif.	152	74.9	13.8	11.3	32.2	7.2	3.2	8.5	34.4
Albany, N. Y.	154	41.7	47.7	10.6	78.3	5.2	3.0	4.9	45.5
Toledo, Ohio-Mich.	142	72.0	20.4	7.6	68.7	5.1	3.2	7.1	30.0
Akron, Ohio	144	75.3	18.6	6.1	63.1	4.6	3.3	8.4	28.6
Birmingham, Ala.	162	69.3	22.6	8.1	55.4	6.2	3.5	16.2	41.0
Norfolk, Va.	146	60.0	28.3	11.7	39.4	7.5	3.4	12.6	48.0
Syracuse, N. Y.	104	53.6	32.9	13.5	68.6	3.5	3.2	6.1	39.7
Oklahoma City, Okla.	147	79.8	13.1	7.1	42.5	6.6	3.1	10.8	31.4
Honolulu, Hawaii	92	51.4	27.5	20.9	41.1	4.9	3.8	26.9	61.4
Youngstown, Ohio	113	78.6	16.9	4.5	63.1	4.5	3.4	9.5	27.3

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1 Overcrowded housing is defined as more than 1 person per room.

Source: U. S. Bureau of the Census, 1960 Census of Housing.

NEW ONE-FAMILY HOUSING AUTHORIZED DURING 1961-1966 AS A PERCENTAGE OF TOTAL AUTHORIZED HOUSING UNITS, BY SMSA

TABLE 6:

	1961 (Per Cent) (1)	1962 (Per Cent) (2)	1963 (Per Cent) (3)	1964 (Per Cent) (4)	1965 (Per Cent) (5)	1966 (Per Cent) (6)	1961-1966 Average (Per Cent) (7)	Addendum: Trailers and 1-family Housing Units as Per Cent of All Housing Units, 1960 (8)
New York, N. Y.-N. J. (SCA)	27.0	28.0	31.2	41.6	40.8	40.5	34.8	28.0
Los Angeles, Calif. (SCA)	45.8	38.7	30.1	30.9	43.0	57.5	41.0	65.8
Chicago, Ill.-Ind. (SCA)	54.7	51.8	51.9	52.6	51.1	45.3	51.2	39.7
Philadelphia, Pa.-N. J.	56.6	50.1	52.2	42.2	47.5	44.0	48.8	29.3
Detroit, Mich.	89.7	74.4	70.5	66.2	59.3	60.3	70.1	69.4
San Francisco, Calif. (SCA)	44.8	42.3	40.9	41.3	50.8	67.3	47.9	56.0
Boston, Mass. (SEA)	56.1	46.0	44.6	32.7	42.9	47.3	44.9	39.4
Washington, D. C.-Md.-Va	48.5	34.8	28.2	33.2	26.8	28.1	33.3	40.2
Pittsburgh, Pa.	83.6	79.4	66.4	69.8	60.9	62.5	70.4	60.2
St. Louis, Mo.-Ill.	70.0	68.2	61.0	53.5	54.7	49.0	59.4	57.7
Cleveland, Ohio	51.2	43.8	32.0	45.0	46.2	57.0	45.9	57.3
Dallas-Fort Worth, Tex. (SCA)	74.9	57.6	45.6	49.9	60.1	57.6	57.6	76.6
Baltimore, Md.	54.4	59.9	44.1	47.2	49.6	36.2	48.6	29.1
Houston, Tex.	60.3	32.8	33.5	38.0	51.3	50.5	44.4	78.0
Minneapolis-St. Paul, Minn.	54.5	45.7	50.3	46.9	45.5	55.4	49.7	64.4
Cincinnati, Ohio-Ky.-Ind.	58.2	53.0	47.6	54.7	49.6	47.7	51.8	50.2
Buffalo, N. Y.	86.6	80.8	78.9	69.9	69.6	76.1	77.0	44.7
Milwaukee, Wis.	50.6	53.7	50.1	42.7	40.9	45.7	47.3	51.2
Atlanta, Ga.	69.7	54.6	46.6	54.0	52.7	46.1	54.0	61.6
Kansas City, Mo.-Kans.	74.1	66.0	66.4	56.3	62.2	54.5	63.3	67.8
Seattle, Wash.	80.8	69.7	67.8	63.3	69.3	60.2	68.5	69.4
San Diego, Calif.	71.3	62.4	55.3	44.0	51.9	57.9	57.1	68.9
Denver, Col.	50.8	66.6	66.6	66.1	68.1	57.0	62.5	66.0
Miami, Fla.	58.7	44.9	39.9	28.7	21.9	20.6	35.8	60.1
San Bernardino-Riverside, Calif.	81.3	68.8	61.0	54.8	64.0	80.2	68.4	84.8
New Orleans, La.	58.0	64.5	44.7	52.7	53.7	55.5	54.9	43.2
Indianapolis, Ind.	85.5	71.5	50.0	50.2	43.9	32.7	55.6	66.0
Portland, Ore.-Wash.	77.7	69.8	61.2	56.2	60.0	57.9	63.8	75.5
Tampa, Fla.	83.9	88.0	83.6	75.4	76.1	68.1	79.2	78.6
Columbus, Ohio	77.9	56.5	53.3	62.2	56.8	48.5	59.2	62.0
Phoenix, Ariz.	77.1	53.4	37.8	44.1	66.6	69.0	58.0	81.2
San Antonio, Tex.	80.1	60.9	56.4	58.0	69.4	64.0	64.8	78.0
Rochester, N. Y.	75.0	72.2	66.9	68.3	61.2	62.9	67.8	58.3
Dayton, Ohio	88.2	76.8	62.2	55.6	59.0	66.8	68.1	70.6
Louisville, Ky.-Ind.	80.9	89.0	80.4	70.8	58.8	61.4	73.6	69.5
Hartford, Conn. (SEA)	68.9	61.7	53.5	42.7	50.9	58.0	56.0	43.9
Memphis, Tenn.-Ark.	64.2	72.2	45.8	61.2	48.1	51.5	57.2	66.8
Providence, R. I. (SEA)	89.3	87.5	85.2	75.9	67.6	67.5	78.8	46.5
Sacramento, Calif.	71.7	53.2	34.6	56.7	64.6	73.1	59.0	74.9
Albany, N. Y.	77.2	85.7	66.8	78.9	68.5	n.a.	75.4	41.7
Toledo, Ohio-Mich.	87.3	83.0	61.1	60.3	61.1	n.a.	70.6	72.0
Akron, Ohio	78.3	75.9	66.4	56.7	61.2	56.5	65.8	75.3
Birmingham, Ala.	80.9	89.6	66.7	80.9	73.8	71.9	77.3	69.3
Norfolk, Va.	92.2	70.1	64.1	48.9	56.2	68.1	66.6	60.0
Syracuse, N. Y.	55.0	71.9	71.5	59.0	50.3	44.0	58.6	53.6
Oklahoma City, Okla.	88.4	79.8	73.7	67.4	74.2	83.8	77.9	79.8
Honolulu, Hawaii	59.1	46.3	49.2	50.4	41.8	31.6	46.4	51.4
Youngstown, Ohio	84.8	96.2	74.1	53.6	55.5	n.a.	72.8	78.6

n.a.—Not available.

Source: U. S. Bureau of the Census, 1960 Census of Housing and Construction Reports—Building Permits, 1961-66 (annual).

DISTRIBUTION OF EMPLOYMENT IN METROPOLITAN AREAS BY INDUSTRY, MARCH, 1967[a]

(in Thousands)

TABLE 7:

	Total Number of Employees (1)	Mining and Manufacturing (2)	Contract Construction (3)	Transportation and Public Utilities (4)	Wholesale and Retail Trade (5)	Finance, Insurance and Real Estate (6)	Service and Miscellaneous (7)	Government (8)
New York, N. Y.-N. J. (SCA)	6,308.2	1,791.3	220.2	500.1	1,302.4	520.1	1,105.9	868.2
Los Angeles, Calif. (SCA)	3,003.1	974.7	116.2	172.6	643.7	160.3	511.0	424.6
Chicago, Ill.-Ind. (SCA)	3,058.5	1,096.7	110.3	215.8	657.0	168.0	476.8	333.8
Philadelphia, Pa.-N. J.	1,682.6	577.8	70.8	111.2	328.6	87.4	265.6	241.2
Detroit, Mich.	1,400.0	592.0	47.4	74.0	280.5	60.3	182.1	163.8
San Francisco, Calif. (SCA)	1,448.2	310.4	69.7	132.8	296.9	93.0	239.8	305.6
Boston, Mass. (SEA)	1,185.8	n.a.	44.0	65.9	259.8	81.2	n.a.	175.3
Washington, D. C.-Md.-Va.	987.8	n.c.	63.0	53.2	184.7	61.2	n.a.	381.6
Pittsburgh, Pa.	821.3	294.6	34.4	56.2	164.5	34.6	140.4	96.6
St. Louis, Mo.-Ill.	867.6	294.7	42.5	65.6	177.6	43.2	133.6	110.4
Cleveland, Ohio	800.4	310.4	30.3	50.2	161.8	37.1	111.0	99.6
Dallas-Fort Worth, Tex. (SCA) 1	530.5	144.3	29.6	43.6	142.1	42.3	73.5	55.1
Baltimore, Md.	720.6	204.2	38.7	53.4	152.7	36.8	113.0	121.8
Houston, Tex.	626.1	152.0	60.2	58.4	166.9	31.3	87.8	69.5
Minneapolis-St. Paul, Minn.	688.0	n.a.	30.6	53.8	165.4	39.9	n.a.	94.3
Cincinnati, Ohio-Ky.-Ind.	464.0	165.9	18.8	34.7	94.3	23.5	63.8	63.1
Buffalo, N. Y.	472.3	n.a.	16.8	30.9	92.0	17.1	n.a.	70.5
Milwaukee, Wis.	528.4	n.a.	22.3	28.8	109.9	25.5	n.a.	61.4
Atlanta, Ga.	508.3	n.a.	23.5	49.4	134.2	35.4	n.a.	77.9
Kansas City, Mo.-Kans.	476.2	130.0	24.1	47.9	113.0	30.1	68.2	62.9
Seattle, Wash.	497.1	n.a.	25.0	35.5	106.4	28.7	n.a.	78.9
San Diego, Calif.	298.4	59.3	13.0	16.4	64.6	13.6	53.0	78.5
Denver, Col.	393.5	75.9	21.0	31.9	96.4	24.2	68.3	75.8
Miami, Fla.	393.6	n.a.	23.2	41.9	105.4	25.3	n.a.	50.3
San Bernardino-Riverside, Calif.	261.2	48.2	13.3	18.1	57.9	9.4	46.4	57.9
New Orleans, La.	363.0	69.8	29.0	47.0	86.1	20.9	61.5	48.8
Indianapolis, Ind.	395.1	n.a.	17.1	26.3	85.7	25.5	n.a.	58.4
Portland, Ore.-Wash.	334.6	n.a.	12.8	29.1	83.0	20.7	n.a.	57.0
Tampa, Fla.	256.9	n.a.	19.0	17.9	73.5	14.6	n.a.	40.3
Columbus, Ohio	328.4	84.9	14.4	19.8	67.8	20.3	49.5	71.5
Phoenix, Ariz.	260.6	58.1	12.5	14.9	63.4	16.9	44.1	50.7
San Antonio, Tex.	223.5	27.6	15.2	10.1	54.6	13.7	36.7	65.6
Rochester, N. Y.	320.0	n.a.	13.7	12.7	57.3	10.3	n.a.	38.0
Dayton, Ohio	302.4	126.2	11.1	11.4	53.0	8.1	37.8	54.8
Louisville, Ky.-Ind.	289.5	n.a.	12.8	21.7	60.5	14.5	n.a.	34.3
Hartford, Conn. (SEA)	298.6	n.a.	n.a.	10.3	55.7	35.7	37.8	33.5
Memphis, Tenn.-Ark.	242.8	58.1	13.4	18.1	60.6	13.0	36.2	43.4
Providence, R. I. (SEA)	342.5	n.a.	12.1	14.5	60.3	13.7	n.a.	45.4
Sacramento, Calif.	241.4	27.0	10.5	17.9	49.0	10.0	29.2	97.8
Albany, N. Y.	258.5	n.a.	11.5	14.9	51.7	9.6	n.a.	65.4
Toledo, Ohio-Mich.	221.0	78.7	9.5	15.6	47.2	7.2	32.1	30.8
Akron, Ohio	224.0	95.7	6.7	13.8	44.0	6.1	28.0	29.8
Birmingham, Ala.	224.0	69.2	12.5	16.9	51.7	15.6	29.7	28.4
Norfolk, Va.	180.2	19.0	11.8	15.8	43.3	7.8	23.6	58.9
Syracuse, N. Y.	212.4	n.a.	10.2	13.3	43.9	10.4	n.a.	34.2
Oklahoma City, Okla.	222.7	37.2	11.5	14.1	50.1	13.6	31.0	65.2
Honolulu, Hawaii	199.7	n.a.	15.7	14.9	47.2	12.6	n.a.	57.2
Youngstown, Ohio	180.8	86.2	6.5	10.1	32.3	4.8	24.4	16.6

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a Excludes agricultural employment, military, and self-employed.

1 Dallas only. n.a.—Not available.

Source: Bureau of Labor Statistics, Employment and Earnings.

PERCENTAGE DISTRIBUTION OF EMPLOYMENT IN METROPOLITAN AREAS BY INDUSTRY, MARCH, 1967a (PER CENT OF TOTAL)

TABLE 8:

	Total Number of Employees (1)	Mining and Manufacturing (2)	Contract Construction (3)	Transportation and Public Utilities (4)	Wholesale and Retail Trade (5)	Finance, Insurance and Real Estate (6)	Service and Miscellaneous (7)	Government (8)
New York, N. Y.-N. J. (SCA)	100.0	28.4	3.5	7.9	20.6	8.2	17.5	13.8
Los Angeles, Calif. (SCA)	100.0	32.5	3.9	5.7	21.4	5.3	17.0	14.1
Chicago, Ill.-Ind. (SCA)	100.0	35.9	3.6	7.1	21.5	5.5	15.6	10.9
Philadelphia, Pa.-N. J.	100.0	34.3	4.2	6.6	19.5	5.2	15.8	14.3
Detroit, Mich.	100.0	42.3	3.4	5.3	20.0	4.3	13.0	11.7
San Francisco, Calif. (SCA)	100.0	21.4	4.8	9.2	20.5	6.4	16.6	21.1
Boston, Mass. (SEA)	100.0	n.a.	3.7	5.6	21.9	6.8	n.a.	14.8
Washington, D. C.-Md.-Va.	100.0	n.a.	6.4	5.4	18.7	6.2	n.a.	38.6
Pittsburgh, Pa.	100.0	35.9	4.2	6.8	20.0	4.2	17.1	11.8
St. Louis, Mo.-Ill.	100.0	34.0	4.9	7.6	20.5	5.0	15.4	12.7
Cleveland, Ohio	100.0	38.8	3.8	6.3	20.2	4.6	13.9	12.4
Dallas-Fort Worth, Tex. (SCA) 1	100.0	27.2	5.6	8.2	26.8	8.0	13.9	10.4
Baltimore, Md.	100.0	28.3	5.4	7.4	21.2	5.1	15.7	16.9
Houston, Tex.	100.0	24.3	9.6	9.3	26.7	5.0	14.0	11.1
Minneapolis-St. Paul, Minn.	100.0	n.a.	4.4	7.8	24.0	5.8	n.a.	13.7
Cincinnati, Ohio-Ky.-Ind.	100.0	35.8	4.1	7.5	20.3	5.1	13.8	13.6
Buffalo, N. Y.	100.0	n.a.	3.6	6.5	19.5	3.6	n.a.	14.9
Milwaukee, Wis.	100.0	n.a.	4.2	5.5	20.8	4.8	n.a.	11.6
Atlanta, Ga.	100.0	n.a.	4.6	9.7	26.4	7.0	n.a.	15.3
Kansas City, Mo.-Kans.	100.0	27.3	5.1	10.1	23.7	6.3	14.3	13.2
Seattle, Wash.	100.0	n.a.	5.0	7.1	21.4	5.8	n.a.	15.9
San Diego, Calif.	100.0	19.9	4.4	5.5	21.6	4.6	17.8	26.3
Denver, Col.	100.0	19.3	5.3	8.1	24.5	6.1	17.4	19.3
Miami, Fla.	100.0	n.a.	5.9	10.6	26.8	6.4	n.a.	12.8
San Bernardino-Riverside, Calif.	100.0	18.5	5.1	6.9	22.2	3.6	17.8	22.2
New Orleans, La.	100.0	19.2	8.0	12.9	23.7	5.8	16.9	13.4
Indianapolis, Ind.	100.0	n.a.	4.3	6.7	21.7	6.5	n.a.	14.8
Portland, Ore.-Wash.	100.0	n.a.	3.8	8.7	24.8	6.2	n a.	17.0
Tampa, Fla.	100.0	n.a.	7.4	7.0	28.6	5.7	n.a.	15.7
Columbus, Ohio	100.0	25.9	4.4	6.0	20.6	6.2	15.1	21.8
Phoenix, Ariz.	100.0	22.3	4.8	5.7	24.3	6.5	16.9	19.5
San Antonio, Tex.	100.0	12.3	6.8	4.5	24.4	6.1	16.4	29.4
Rochester, N. Y.	100.0	n.a.	4.3	4.0	17.9	3.2	n.a.	11.9
Dayton, Ohio	100.0	41.7	3.7	3.8	17.5	2.7	12.5	18.1
Louisville, Ky.-Ind.	100.0	n.a.	4.4	7.5	20.9	5.0	n.a.	11.8
Hartford, Conn. (SEA)	100.0	n.a.	n.a.	3.4	18.7	12.0	12.7	11.2
Memphis, Tenn.-Ark.	100.0	23.9	5.5	7.5	25.0	5.4	14.9	17.9
Providence, R. I. (SEA)	100.0	n.a.	3.5	4.2	17.6	4.0	n.a.	13.3
Sacramento, Calif.	100.0	11.2	4.3	7.4	20.3	4.1	12.1	40.5
Albany, N. Y.	100.0	n.a.	4.4	5.8	20.0	3.7	n.a.	25.3
Toledo, Ohio-Mich.	100.0	35.6	4.3	7.1	21.4	3.3	14.5	13.9
Akron, Ohio	100.0	42.7	3.0	6.2	19.6	2.7	12.5	13.3
Birmingham, Ala.	100.0	30.9	5.6	7.5	23.1	7.0	13.3	12.7
Norfolk, Va.	100.0	10.5	6.5	8.8	24.0	4.3	13.1	32.7
Syracuse, N. Y.	100.0	n.a.	4.8	6.3	20.7	4.9	n.a.	16.1
Oklahoma City, Okla.	100.0	16.7	5.2	6.3	22.5	6.1	13.9	29.3
Honolulu, Hawaii	100.0	n.a.	7.9	7.5	23.6	6.3	n.a.	28.6
Youngstown, Ohio	100.0	47.7	3.6	5.6	17.9	2.7	13.5	9.2

a Excludes agricultural employment, military, and self-employed.

1 Dallas only. n.a.—Not available.

Source: Bureau of Labor Statistics, Employment and Earnings.

TABLE 9:

PERCENTAGE DISTRIBUTION OF VALUE ADDED BY MANUFACTURES IN 1963

	United States	New York, N.Y.-N.J. (SCA)	Los Angeles, Calif. (SCA)	Chicago, Ill.-Ind. (SCA)	Philadelphia, Pa.-N.J.	Detroit, Mich.	San Francisco, Calif. (SCA)	Boston, Mass. (SCA)	Washington, D.C.-Md.	Pittsburgh, Pa.	St. Louis, Mo.-Ill.	Cleveland, Ohio	Dallas-Fort Worth, Tex. (SCA)	Baltimore, Md.	Houston, Tex.
							Per cent of total								
Electrical and other machinery (35, 36)	17.9	15.2	23.5	22.3	18.2	17.1	16.6	26.6	18.7	15.2	10.2	24.9	22.3	16.3	12.4
Transportation equipment (37)	11.9	6.8	18.3	4.5	6.1	42.8	4.8a	7.4	(D)	2.8	24.3	18.6	27.4	14.1	1.0
Food and kindred products (20)	11.4	9.4	8.3	11.9	10.5	3.9	20.0	11.0	18.9	7.5	12.5	4.4	13.9	12.6	11.4
Chemicals and allied products (28)	9.2	13.0	4.7	8.7	12.9	3.5	6.3	4.3	3.0	3.7	12.1	6.5	6.0	10.3	31.2
Primary metal industries (33)	7.9	2.6	2.9	15.0	8.0	11.3	4.5	1.4	—	46.4	8.8	15.3	3.9	21.4	6.9
Fabricated metal products (34)	6.1	5.2	6.6	9.5	7.4	7.9	7.1	8.2	4.4	9.9	6.3	10.5	4.7	4.8	6.9
Printing and publishing (27)	5.5	13.5	4.2	8.9	7.1	2.8	6.8	9.2	36.8	2.8	4.6	5.3	6.3	4.0	2.7
Apparel and related products (23)	4.1	14.0	3.4	1.8	4.7	1.3	1.5	5.0	.4	.4	2.5	2.9	4.8	4.9	.5
Textile mill products (22)	3.2	2.7	.6	.4	3.7	.3	.1	1.5	—	(D)	.5	.7	.2a	.4	(D)
Lumber and wood products (24)	2.1	.4	.8	.4	.5	.3	.7	(D)	1.0	.3	.4	.2	.6	.5	1.0
Instruments and related products (38)	2.1	2.6	2.1	3.2	2.6	.4	1.0	6.9	1.5	1.3	1.2	(D)	.7	.3	.3
Furniture and fixtures (25)	1.6	1.3	2.3a	1.6	1.0	.4	1.4	1.0	.8	.3	1.0	1.3	1.8	1.1	.7
Ordnance and accessories (19)	1.5	.1	9.8a	—	.2	.4	—	(D)	—	(D)	(D)	(D)	(D)	(D)	(D)
All other manufacturing (21, 26, 29, 30, 31, 32, 39)	15.7	13.2	11.3	11.7	15.5	6.2	14.9	17.0	10.7	9.0	13.9	7.3	8.7	8.8	24.3b
							Millions of dollars								
Total value added—all manufacturing establishments	192,103	19,134	10,178	11,940	6,032	6,690	3,757	3,014	525	2,879	3,119	3,379	1,776	2,356	1,918
							Dollars per capita								
Addendum: Per capita value added	1,018	1,229	1,358	1,687	1,324	1,719	1,028	942	234	1,217	1,432	1,723	970	1,315	1,209

TABLE 9: Continued

	Minnea-polis-St. Paul, Minn.	Cin-cinnati, Ohio-Ky.-Ind.	Buffalo, N.Y.	Mil-waukee, Wis.	Atlanta, Ga.	Kansas City, Mo.-Kans.	Seattle, Wash.	San Diego, Calif.	Denver, Col.	Miami, Fla.	San Ber-nardino-River-side, Calif.	New Orleans, La.	Indiana-polis, Ind.	Port-land, Ore.-Wash.	Tampa, Fla.
							Per cent of total								
Electrical and other machinery (35, 36)	30.0	15.0	13.2	44.3	4.9	1.5a	11.8	11.3	8.0	6.1	6.3	1.6a	22.6	14.4	22.0
Transportation equipment (37)	6.2	19.6	20.7	7.8	40.2	62.7	24.2	22.0	(D)	4.7	17.6	16.5	27.4	6.0	1.7
Food and kindred products (20)	13.5	16.3	9.6	13.9	13.3	8.4	14.1	2.6a	19.2	20.9	10.3	24.8	10.7	16.9	22.3
Chemicals and allied products (28)	7.4	17.4	10.5	2.5	5.7	1.0	10.0	1.5	4.2	3.0	—	4.7	14.5	4.6	13.1
Primary metal industries (33)	1.3	1.7	20.5	8.2	1.8	1.5	5.5	.2	1.3	2.8	3.8	(D)	3.3	(D)	—
Fabricated metal products (34)	5.4	6.5	5.1	7.3	3.6	3.4	5.2	1.5	4.5	15.4	3.8	7.3	5.4	6.8	7.4
Printing and publishing (27)	8.7	6.7	3.7	4.5	6.1	2.9	8.2	5.0	6.6	12.4	4.7	4.5	4.6	4.7	8.2
Apparel and related products (23)	.2	1.7	.7	.8	6.9	1.0	3.4	1.7	.9	9.4	.4	4.4	.4	3.3	1.0
Textile mill products (22)	.4	(D)	.7	.4	2.4	(D)	.1	—	(D)	1.1	—	(D)	(D)	2.6	—
Lumber and wood products (24)	1.6	.4	.4	.4	.6	4.3	.4	.6	.4	1.4	1.2	.6	1.1	8.7	—
Instruments and related products (38)	5.2	.7	1.3	1.7	(D)	(D)	.5	.3	.9	(D)	—	.6	.4	1.4	—
Furniture and fixtures (25)	.8	1.8	.8	.5	2.1	.5	1.1	.9	1.0	5.8	—	.5	.6	2.3	1.2
Ordnance and accessories (19)	—	—	(D)	(D)	—	—	(D)	(D)	(D)	—	—	(D)	(D)	(D)	—
All other manufacturing (21, 26, 29, 30, 31, 32, 39)	12.7	10.1	12.6	7.1	12.2	6.9	11.1	3.0	5.8	16.0	16.6	16.2	8.5	19.5c	13.4
							Millions of dollars								
Total value added—all manufacturing establishments	1,957	2,057	2,069	2,237	1,153	1,624	1,514	661	926	363	494	618	1,369	769	404
							Dollars per capita								
Addendum: Per capita value added	1,251	1,586	1,583	1,782	1,032	1,421	1,295	592	863	350	519	633	1,429	891	478

TABLE 9: Continued

	Columbus, Ohio	Phoenix, Ariz.	San Antonio, Tex.(1)	Rochester, N.Y.	Dayton, Ohio	Louisville, Ky.-Ind.	Hartford, Conn. (SEA)	Memphis, Tenn.-Ark.	Providence, R.I. (SEA)	Sacramento, Calif.	Albany, N.Y.	Toledo, Ohio-Mich.	Akron, Ohio	Birmingham, Ala.	Norfolk, Va.
							Per cent of total								
Electrical and other machinery (35, 36)	27.1	30.5	8.8	20.8	27.9a	2.8a	25.8	1.2	14.0	1.7	(D)	14.5	10.6	3.3	—
Transportation equipment (37)	16.6	17.7	—	(D)	7.8	(D)	(D)	2.3	(D)	—	(D)	24.4	(D)	9.4	—
Food and kindred products (20)	10.5	14.2	42.4	9.9	5.5	15.8	7.5	19.3	5.7	25.5	10.0	7.2	4.3	7.1	20.7
Chemicals and allied products (28)	5.0	2.8	—	2.2	3.6	14.2	1.5	22.3	3.2	—	10.9	4.0	6.8	2.5	8.0
Primary metal industries (33)	2.7	(D)	—	.6	2.4	(D)	.9	.9	10.0	—	5.6	6.5	1.8	56.6	—
Fabricated metal products (34)	13.8	4.6	4.4	2.8	3.0	5.8	5.0	3.4	8.2	5.4	2.5	7.6	11.0	10.2	3.5
Printing and publishing (27)	5.9	7.1	9.8	3.5	8.3	3.4	3.4	4.9	3.4	4.1	6.7	2.2	2.0	2.6	6.5
Apparel and related products (23)	.2a	2.5	6.8	3.2	.4	.9	.8	1.7	2.1	—	4.9	.2	.1	.8	—
Textile mill products (22)	(D)	(D)	—	.3	(D)	.2	1.7	—	12.2	—	5.2	(D)	(D)	(D)	—
Lumber and wood products (24)	.3	1.4	—	.2	.5	1.8	.5	5.2	(D)	—	.6	.7	.4	.5	1.5
Instruments and related products (38)	1.9	(D)	—	50.0	.2	.1	1.6	.3	4.3	—	(D)	.7	.3	(D)	—
Furniture and fixtures (25)	1.2	1.4	—	.6	.7	1.7	.5	2.8	(D)	—	.3	1.0	.2	.9	—
Ordnance and accessories (19)	—	—	—	(D)	—	(D)	(D)	(D)	—	—	—	(D)	(D)	—	—
All other manufacturing (21, 26, 29, 30, 31, 32, 39)	14.1	6.7	10.2	5.3	15.5	19.6d	3.3	13.9	33.6e	—	21.6f	29.4g	48.2h	5.0	8.5
							Millions of dollars								
Total value added—all manufacturing establishments	962	436	205	1,762	1,318	1,596	949	575	1,075	462	691	911	1,014	854	199
							Dollars per capita								
Addendum: Per capita value added	1,179	547	267	2,294	1,767	2,092	1,295	802	1,471	643	1,013	1,430	1,641	1,343	319

TABLE 9: Continued

	Syracuse, N.Y.	Oklahoma City, Okla.(2)	Honolulu, Hawaii	Youngstown, Ohio
	Per cent of total			
Electrical and other machinery (35, 36)	17.1a	9.0	—	13.0
Transportation equipment (37)	(D)	8.0	—	14.7
Food and kindred products (20)	11.2	**22.2**	**54.7**	2.7
Chemicals and allied products (28)	11.0	—	—	.8
Primary metal industries (33)	6.8	—	—	**50.8**
Fabricated metal products (34)	5.6	10.1	—	9.0
Printing and publishing (27)	4.5	7.6	8.4	1.3
Apparel and related products (23)	.5	—	—	.3
Textile mill products (22)	.5	—	—	—
Lumber and wood products (24)	.5	—	—	.2
Instruments and related products (38)	(D)	—	—	(D)
Furniture and fixtures (25)	.3	—	—	(D)
Ordnance and accessories (19)	(D)	—	—	(D)
All other manufacturing (21, 26, 29, 30, 31, 32, 39)	9.4	3.8	7.8	4.0
	Millions of dollars			
Total value added—all manufacturing establishments	780	288	179	902
	Dollars per capita			
Addendum: Per capita value added	1,324	506	309	1,779

Note: Bold-faced figures were used for the most important industry group of each SMSA. Numbers in brackets next to industry group are the S.I.C. two-digit code numbers of the industries included in this group.

(D) —Not reported by the Bureau of the Census due to disclosure rule. Publication of the data would disclose information on the operations of a particular plant or company Because of compliance with the disclosure rule, the percentage shares will not add up to 100% in many cases.

a —Includes only part of the value added in this industry group in this SMSA, thus actual percentage is higher than that shown.

b —Includes 17.7% petroleum and coal products.

c —Includes 14.0% paper and allied products.

d —Includes 15.6% tobacco.

e —Includes 17.7% jewelry and silverware (S.I.C. code 391) and costume jewelry and notions (S.I.C. code 396).

f —Includes 10.7% stone, glass, and clay.

g —Includes 17.3% stone, glass, and clay.

h —Includes 45.1% rubber and rubber products.

(1) Bexar County data only (total SMSA had value added of 212).

(2) Oklahoma City data only (SMSA had value added of 299).

Source: Bureau of the Census, 1963 Census of Manufacturers.

COMPONENTS OF CHANGE IN EMPLOYMENT, 1940-1950

TABLE 10:

	Total Change		National Growth Component		Industry Mix Component		Regional Share Component		Addendum:
	Increase (Thousands) (1)	Annual Growth Rate (2)	Increase (Thousands) (3)	Annual Growth Rate (4)	Change (Thousands) (5)	Annual Growth Rate (6)	Change (Thousands) (7)	Annual Growth Rate (8)	Total Employment, 1950 (Thousands) (9)
New York, N. Y.-N. J. (SCA)	916.4	1.9	1,178.9	2.4	467.3	1.0	−729.8	−1.5	5,337.7
Los Angeles, Calif. (SCA)	628.9	4.7	287.7	2.4	109.2	1.0	232.0	2.0	1,707.9
Chicago, Ill.-Ind. (SCA)	509.6	2.4	507.8	2.4	238.4	1.2	−236.7	−1.2	2,414.1
Philadelphia, Pa.-N. J.	302.2	2.3	310.6	2.4	103.7	0.9	−112.1	−0.9	1,466.9
Detroit, Mich.	311.0	3.1	236.5	2.4	141.2	1.5	− 66.6	−0.7	1,197.8
San Francisco, Calif. (SCA)	362.1	4.7	166.8	2.4	92.7	1.4	102.7	1.5	987.6
Boston, Mass. (SEA)	189.4	1.8	249.7	2.4	98.3	1.0	−158.5	−1.6	1,125.8
Washington, D. C.-Md.-Va.	238.2	4.5	114.1	2.4	82.4	1.8	41.7	0.9	666.2
Pittsburgh, Pa.	147.8	2.0	176.6	2.4	49.5	0.7	− 78 3	−1.1	810.2
St. Louis, Mo.-Ill.	155.1	2.5	149.4	2.4	49.7	0.9	− 44.0	−0.8	715.6
Cleveland, Ohio	151.6	2.7	130.8	2.4	63.7	1.2	− 42.8	−0.8	642.1
Dallas-Fort Worth, Tex. (SCA)	186.4	5.1	77.7	2.4	4.9	0.2	103.8	3.1	477.8
Baltimore, Md.	118.4	2.4	120.2	2.4	48.6	1.0	− 50.4	−1.1	569.2
Houston, Tex.	125.6	4.2	65.6	2.4	6.4	0.3	53.6	2.0	371.7
Minneapolis-St. Paul, Minn.	121.9	3.0	94.2	2.4	37.1	1.0	− 9.3	−0.3	475.0
Cincinnati, Ohio-Ky.-Ind.	77.9	2.2	85.8	2.4	33.2	1.0	− 41.2	−1.2	399.6
Buffalo, N. Y.	94.8	2.6	87.9	2.4	34.2	1.0	− 27.3	−0.8	424.3
Milwaukee, Wis.	116.4	3.3	80.6	2.4	42.1	1.3	− 6.2	−0.2	418.7
Atlanta, Ga.	80.6	3.2	57.5	2.4	5.1	0.2	18.0	0.8	296.0
Kansas City, Mo.-Kans.	84.4	2.8	71.8	2.4	18.3	0.7	− 5.6	−0.2	353.6
Seattle, Wash.	109.8	4.1	58.4	2.4	23.9	1.0	27.5	1.2	328.9
San Diego, Calif.	117.0	7.7	28.6	2.4	46.3	3.7	42.0	3.4	224.3
Denver, Col.	89.4	4 7	41.3	2.4	17.8	1.1	30.3	1.8	244.5
Miami, Fla.	90.6	6.1	29.6	2.4	3.1	0.3	57.9	4.3	201.6
San Bernardino-Riverside, Calif.	70.7	6.3	22.5	2.4	7.1	0.8	41.2	4.1	154.9
New Orleans, La.	64.3	2.8	54.0	2.4	13.7	0.6	− 3.4	−0.2	266.7
Indianapolis, Ind.	73.0	2.9	58.5	2.4	21.4	0.9	− 6.9	−0.3	292.3
Portland, Ore.-Wash.	87.8	3.9	49.7	2.4	14.4	0.7	23.7	1.2	274.2
Tampa, Fla.	52.1	4.4	25.9	2.4	0.9	0.1	25.3	2.3	149.5
Columbus, Ohio	64.5	3.5	41.7	2.4	14.4	0.9	8.4	0.5	220.8
Phoenix, Ariz.	57.2	7.4	14.5	2.4	− 0.8	−0.2	43.4	6.0	111.7
San Antonio, Tex.	72.8	4.6	33.9	2.4	38.7	2.7	0.2	0.0	200.0
Rochester, N. Y.	41.5	1.8	55.0	2.4	13.5	0.6	− 27.1	−1.2	247.9
Dayton, Ohio	70.0	4.0	39.4	2.4	25.8	1.6	4.8	0.3	217.5
Louisville, Ky.-Ind.	61.7	3.2	43.7	2.4	10.4	0.6	7.5	0.4	225.5
Hartford, Conn. (SEA)	50.3	2.5	49.0	2.4	24.6	1.3	− 23.3	−1.2	234.1
Memphis, Tenn.-Ark.	57.9	3.2	41.4	2.4	− 3.9	−0.3	20.4	1.2	213.3
Providence, R. I. (SEA)	39.6	1.6	62.8	2.4	13.1	0.5	− 36.4	−1.4	275.3
Sacramento, Calif.	56.1	5.3	22.2	2.4	4.6	0.5	29.2	3.0	139.6
Albany, N. Y.	39.5	1.9	52.8	2.4	24.6	1.2	− 37.9	−1.8	237.6
Toledo, Ohio-Mich.	52.3	3.0	40.7	2.4	13.4	0.9	− 1.8	−0.1	205.0
Akron, Ohio	53.7	3.6	34.1	2.4	9.3	0.7	10.3	0.8	181.7
Birmingham, Ala.	50.4	2.9	40.5	2.4	− 2.0	−0.1	11.9	0.8	202.4
Norfolk, Va.	94.8	6.7	27.9	2.4	25.3	2.2	41.6	3.4	199.3
Syracuse, N. Y.	36.7	2.5	34.5	2.4	10.2	0.8	− 8.0	−0.6	166.1
Oklahoma City, Okla.	53.9	4.3	27.1	2.4	4.1	0.4	22.7	2.0	155.6
Honolulu, Hawaii	24.1	2.0	30.0	2.4	57.9	4.2	− 63.8	−4.4	136.6
Youngstown, Ohio	41.0	2.9	32.5	2.4	9.1	0.7	− 0.6	−0.1	163.0

Source: U. S. Department of Commerce, Office of Business Economics, Growth Patterns in Employment by County, 1940-1950 and 1950-1960.

COMPONENTS OF CHANGE IN EMPLOYMENT, 1950-1960

TABLE 11:

	Total Change		National Growth Component		Industry Mix Component		Regional Share Component		Addendum:
	Increase (Thousands) (1)	Annual Growth Rate (2)	Increase (Thousands) (3)	Annual Growth Rate (4)	Increase (Thousands) (5)	Annual Growth Rate (6)	Change (Thousands) (7)	Annual Growth Rate (8)	Total Employment, 1960 (Thousands) (9)
New York, N. Y.-N. J. (SCA)	683.9	1.2	826.3	1.5	464.1	0.8	−606.6	−1.1	6,021.6
Los Angeles, Calif. (SCA)	952.9	4.5	264.4	1.5	163.1	0.9	525.4	2.7	2,660.8
Chicago, Ill.-Ind. (SCA)	328.9	1.3	373.3	1.5	201.3	0.8	−246.1	−1.0	2,743.0
Philadelphia, Pa.-N. J.	222.9	1.4	227.1	1.5	118.8	0.8	−123.1	−0.8	1,689.8
Detroit, Mich.	136.2	1.1	185.4	1.5	19.6	0.2	− 68.8	−0.5	1,334.0
San Francisco, Calif. (SCA)	325.4	2.9	152.9	1.5	95.4	1.0	77.2	0.8	1,313.0
Boston, Mass. (SEA)	123.3	1.1	174.3	1.5	95.6	0.8	−146.6	−1.2	1,249.1
Washington, D. C.-Md.-Va.	184.0	2.5	103.1	1.5	87.7	1.2	− 6.8	−0.1	850.2
Pittsburgh, Pa.	23.7	0.3	125.4	1.5	37.0	0.5	−138.7	−1.6	833.9
St. Louis, Mo.-Ill.	70.3	0.9	110.8	1.5	56.8	0.8	− 97.2	−1.3	785.9
Cleveland, Ohio	95.2	1.4	99.4	1.5	52.4	0.8	− 56.7	−0.9	737.3
Dallas-Fort Worth, Tex (SCA)	185.8	3.3	74.0	1.5	35.1	0.7	76.8	1.5	663.6
Baltimore, Md.	93.6	1.5	88.1	1.5	50.9	0.9	− 45.4	−0.8	662.8
Houston, Tex.	155.8	3.6	57.5	1.5	10.1	0.3	88.2	2.1	527.5
Minneapolis-St. Paul, Minn.	103.0	2.0	73.5	1.5	32.3	0.7	− 2.8	−0.1	578.0
Cincinnati, Ohio-Ky.-Ind.	64.6	1.5	61.9	1.5	22.5	0.5	− 19.8	−0.5	464.2
Buffalo, N. Y.	54.9	1.2	65.7	1.5	25.9	0.6	− 36.6	−0.8	479.2
Milwaukee, Wis.	68.0	1.5	64.8	1.5	39.1	0.9	− 36.0	−0.8	486.7
Atlanta, Ga.	103.6	3.0	45.8	1.5	11.5	0.4	46.3	1.5	399.6
Kansas City, Mo.-Kans.	76.4	2.0	54.7	1.5	17.4	0.5	4.3	0.1	430.0
Seattle, Wash.	97.2	2.6	50.9	1.5	35.9	1.0	10.4	0.3	426.1
San Diego, Calif.	194.0	6.4	34.7	1.5	46.9	1.9	112.4	4.1	418.3
Denver, Col.	121.4	4.1	37.8	1.5	19.7	0.8	63.9	2.3	365.9
Miami, Fla.	164.7	6.2	31.2	1.5	7.0	0.7	126.5	5.0	366.3
San Bernardino-Riverside, Calif.	134.9	6.5	24.0	1.5	1.4	0.1	109.5	5.5	289.8
New Orleans, La.	50.7	1.8	41.3	1.5	14.2	0.5	− 4.8	−0.2	317.4
Indianapolis, Ind.	70.5	2.2	45.3	1.5	19.9	0.6	5.3	0.2	362.8
Portland, Ore.-Wash.	38.2	1.3	42.5	1.5	4.2	0.1	− 8.5	−0.3	312.4
Tampa, Fla.	112.5	5.8	23.1	1.5	5.7	0.4	83.7	4.5	262.0
Columbus, Ohio	66.7	2.7	34.2	1.5	19.4	0.8	13.1	0.6	287.5
Phoenix, Ariz.	127.2	7.9	17.3	1.5	3.3	0.3	106.7	6.9	238.9
San Antonio, Tex.	57.8	2.6	31.0	1.5	22.3	1.1	4.6	0.2	257.8
Rochester, N. Y.	35.8	1.4	38.4	1.5	14.1	0.6	− 16.6	−0.7	283.7
Dayton, Ohio	56.8	2.3	33.7	1.5	24.0	1.0	− 0.9	0.0	274.3
Louisville, Ky.-Ind.	31.3	1.3	34.9	1.5	10.2	0.4	− 13.9	−0.6	256.8
Hartford, Conn. (SEA)	51.6	2.0	36.2	1.5	33.7	1.4	− 18.3	−0.8	285.7
Memphis, Tenn.-Ark.	33.4	1.5	33.0	1.5	4.1	0.2	− 3.7	−0.2	246.7
Providence, R. I. (SEA)	6.5	0.2	42.7	1.5	0.7	0.0	− 36.8	−1.3	281.8
Sacramento, Calif.	99.3	5.5	21.6	1.5	1.7	0.1	76.0	4.4	238.9
Albany, N. Y.	10.5	0.4	36.8	1.5	21.2	0.9	− 47.5	−1.9	248.1
Toledo, Ohio-Mich.	21.3	1.0	31.7	1.5	7.0	0.3	− 17.4	−0.8	226.3
Akron, Ohio	38.5	1.9	28.1	1.5	12.8	0.7	− 2.4	−0.1	220.2
Birmingham, Ala.	15.4	0.7	31.3	1.5	0.1	0.1	− 16.0	−0.8	217.8
Norfolk, Va.	32.2	1.5	30.8	1.5	44.4	2.0	− 43.1	−2.0	231.5
Syracuse, N. Y.	29.9	1.7	25.7	1.5	10.6	0.6	− 6.4	−0.4	196.0
Oklahoma City, Okla.	44.8	2.6	24.1	1.5	8.8	0.6	11.9	0.7	200.4
Honolulu, Hawaii	71.2	4.3	21.2	1.5	18.5	1.3	31.6	2.1	207.8
Youngstown, Ohio	15.2	0.9	25.2	1.5	7.0	0.4	− 17.1	−1.0	178.2

Source: U. S. Department of Commerce, Office of Business Economics, Growth Patterns in Employment by County, 1940-1950 and 1950-1960.

PER CAPITA INCOME BY MAJOR SOURCE, 1963 AND 1965

TABLE 12:

	1963			1965		
	Total Adjusted Gross Income (1)	Earnings [1] (2)	Property [2] Income (3)	Total Adjusted Gross Income (4)	Earnings [1] (5)	Property [2] Income (6)
New York, N. Y.-N. J. (SCA) [3]	$2,686	$2,354	$332	$2,824	$2,439	$385
Los Angeles, Calif. (SCA)	2,562	2,306	256	2,789	2,515	274
Chicago, Ill.-Ind. (SCA)	2,510	2,264	246	2,859	2,560	299
Philadelphia, Pa.-N. J.	2,066	1,864	202	2,330	2,093	237
Detroit, Mich.	2,257	2,072	185	2,794	2,557	237
San Francisco, Calif (SCA)	2,713	2,396	317	3,018	2,662	356
Boston, Mass. (SEA)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Washington, D. C.-Md.-Va.	2,609	2,367	242	2,737	2,437	300
Pittsburgh, Pa.	2,032	1,836	213	2,135	1,911	224
St. Louis, Mo.-Ill.	2,150	1,937	223	2,505	2,253	252
Cleveland, Ohio	2,331	2,110	221	2,688	2,376	312
Dallas-Fort Worth, Tex. (SCA)	2,092	1,867	225	2,317	2,099	218
Baltimore, Md.	2,091	1,925	166	2,270	2,065	205
Houston, Tex.	1,825	1,604	221	2,180	1,966	214
Minneapolis-St. Paul, Minn.	2,337	2,128	209	2,621	2,372	249
Cincinnati, Ohio-Ky.-Ind.	2,027	1,811	216	2,228	1,973	255
Buffalo, N. Y.	2,054	1,883	171	2,331	2,139	192
Milwaukee, Wis.	2,419	2,216	203	2,725	2,480	245
Atlanta, Ga.	2,045	1,883	162	2,415	2,218	197
Kansas City, Mo.-Kans.	2,331	2,132	199	2,402	2,170	232
Seattle, Wash.	2,596	2,375	221	2,674	2,440	234
San Diego, Calif.	1,775	1,554	221	2,096	1,883	213
Denver, Col.	2,226	2,015	210	2,454	2,239	215
Miami, Fla.	1,810	1,565	245	2,101	1,776	325
San Bernardino-Riverside, Calif	1,865	1,687	178	1,998	1,812	186
New Orleans, La.	1,750	1,575	175	2,024	1,788	236
Indianapolis, Ind.	2,280	2,087	193	2,493	2,301	192
Portland, Ore.-Wash.	2,290	2,072	218	2,509	2,259	250
Tampa, Fla.	1,601	1,252	349	1,852	1,518	334
Columbus, Ohio	2,104	1,971	133	2,357	2,188	169
Phoenix, Ariz	1,923	1,702	221	2,061	1,824	237
San Antonio, Tex.	1,376	1,221	155	1,669	1,502	167
Rochester, N. Y.	2,275	2,065	210	2,705	2,445	260
Dayton, Ohio	2,263	2,108	155	2,415	2,240	175
Louisville, Ky.-Ind.	1,871	1,691	180	2,254	2,052	202
Hartford, Conn. (SEA)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Memphis, Tenn.-Ark.	1,573	1,455	118	1,794	1,631	163
Providence, R. I. (SEA)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sacramento, Calif.	2,179	2,007	172	2,317	2,173	144
Albany, N. Y.	1,984	1,861	123	2,437	2,200	237
Toledo, Ohio-Mich.	1,882	1,790	173	2,333	2,110	223
Akron, Ohio	2,179	2,014	165	2,320	2,159	161
Birmingham, Ala.	1,660	1,525	135	1,979	1,833	146
Norfolk, Va.	1,383	1,275	108	1,721	1,592	129
Syracuse, N. Y.	1,994	1,846	148	2,086	1,900	186
Oklahoma City, Okla.	1,998	1,843	155	2,056	1,867	189
Honolulu, Hawaii	1,863	1,685	178	2,196	1,992	204
Youngstown, Ohio	1,888	1,761	127	2,385	2,274	111

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n.a.—Not available.

[1] "Earnings" includes the following items: wages and salaries (net), business (proprietor and partnerships) and farm net profit and loss.

[2] "Property income" includes the following items: Net gain and loss from sales of capital assets, total domestic and foreign dividends received, interest received, rent net income and loss, estates and trusts income and loss, and unspecified items of nonearned income.

[3] Excludes Somerset and Middlesex Counties, N. J.

Source: U. S. Treasury Department, Internal Revenue Service, Statistics of Income, Individual Income Tax Returns, 1963 and 1965.

AVERAGE HOURLY EARNINGS IN MANUFACTURING IN MAJOR METROPOLITAN AREAS, 1951-66

TABLE 13:

	1951 ($) (1)	1956 ($) (2)	1961 ($) (3)	1966 ($) (4)	Addendum: Annual Growth Rate 1961-66 (%) (5)
New York, N. Y.-N. J. (SCA)	1.66	2.01	2.40	2.76	2.8
Los Angeles, Calif. (SCA)	1.74	2.20	2.68	3.09	2.8
Chicago, Ill.-Ind. (SCA) 1	n.a.	2.13	2.55	2.99	3.2
Philadelphia, Pa.-N. J.	1.62	2.06	2.45	2.87	3.2
Detroit, Mich.	n.a.	n.a.	2.98	3.54	3.5
San Francisco, Calif. (SCA) 2	1.85	2.32	2.91	3.42	3.4
Boston, Mass. (SEA)	n.a.	n.a.	2.34	2.76	3.4
Washington, D. C.-Md.-Va.	n.a.	2.11	2.55	2.95	3.0
Pittsburgh, Pa.	1.79	2.37	2.86	3.22	2.5
St. Louis, Mo.-Ill.	n.a.	n.a.	2.58	3.02	3.2
Cleveland, Ohio	n.a.	n.a.	2.73	3.16	3.0
Dallas-Fort Worth, Tex. (SCA) 3	n.a.	n.a.	2.03	2.37	3.2
Baltimore, Md.	1.55	2.04	2.47	2.85	2.8
Houston, Tex.	n.a.	n.a.	2.63	3.00	2.7
Minneapolis-St. Paul, Minn.	n.a.	n.a.	2.56	2.96	3.0
Cincinnati, Ohio-Ky.-Ind.	n.a.	n.a.	2.52	2.90	2.8
Buffalo, N. Y.	n.a.	n.a.	2.76	3.21	3.0
Milwaukee, Wis.	n.a.	n.a.	2.68	3.18	3.5
Atlanta, Ga.	1.31	1.78	2.10	2.61	4.4
Kansas City, Mo.-Kans.	n.a.	n.a.	2.48	2.93	3.4
Seattle, Wash.	1.85	2.23	2.73	3.35	4.2
San Diego, Calif.	1.72	2.22	2.83	3.41	3.7
Denver, Col.	1.52	2.02	2.55	2.93	2.8
Miami, Fla.	n.a.	1.56	1.92	2.15	2.3
San Bernardino-Riverside, Calif.	n.a.	2.18	2.76	3.07	2.1
New Orleans, La.	1.33	1.83	2.33	2.83	3.9
Indianapolis, Ind.	n.a.	n.a.	2.53	3.04	3.7
Portland, Ore.-Wash.	1.82	2.21	2.61	3.07	3.4
Tampa, Fla.	1.16	1.52	1.91	2.34	4.2
Columbus, Ohio	n.a.	n.a.	2.54	2.97	3.2
Phoenix, Ariz.	1.55	2.11	2.55	2.82	2.1
San Antonio, Tex.	n.a.	n.a.	1.72	1.98	2.8
Rochester, N. Y.	n.a.	n.a.	2.47	3.02	4.1
Dayton, Ohio	n.a.	n.a.	2.83	3.39	3.7
Louisville, Ky.-Ind.	n.a.	n.a.	2.52	2.98	3.4
Hartford, Conn. (SEA)	n.a.	n.a.	2.48	2.97	3.7
Memphis, Tenn.-Ark.	1.37	1.72	2.08	2.41	3.0
Providence, R. I. (SEA)	n.a.	n.a.	1.91	2.28	3.5
Sacramento, Calif.	1.75	2.23	2.86	3.45	3.9
Albany, N. Y.	n.a.	n.a.	2.51	2.94	3.2
Toledo, Ohio-Mich.	n.a.	n.a.	2.77	3.23	3.2
Akron, Ohio	n.a.	n.a.	2.95	3.42	3.0
Birmingham, Ala.	1.49	2.05	2.58	2.90	2.3
Norfolk, Va.	n.a.	1.64	1.92	2.30	3.7
Syracuse, N. Y.	n.a.	n.a.	2.45	2.89	3.4
Oklahoma City, Okla.	1.40	1.76	2.02	2.39	3.4
Honolulu, Hawaii	n.a.	n.a.	n.a.	n.a.	n.a.
Youngstown, Ohio	n.a.	n.a.	3.01	3.37	2.3

n.a.—Not available.

1 Data are only for central SMSA of Chicago, Ill.-Ind. SCA.

2 Data are only for San Francisco-Oakland SMSA; excludes San Jose SMSA.

3 Data are only for Dallas SMSA; excludes Fort Worth SMSA.

Source: U. S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings Statistics for States and Areas, 1939-1966.

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Glossary

Census Tracts–Small areas into which metropolitan areas have been divided for statistical purposes.

Criteria–Tract boundaries are set cooperatively by the Bureau of the Census and local committees. Small areas, whose boundaries are maintained a long time, are established, so that comparisons may be made from census to census. Average population is 4,000.

Central Business District–An area with high land values and heavy traffic, and concentrations of retail stores and business service activities.

Criteria–Central business districts are made up out of census tracts designated by the Bureau of the Census and local committees.

City (or Urbanized Area)–A land area densely settled to facilitate the interchange of products and services and the division of labor. It is composed of a core and suburbs.

Criteria–A population density of more than 1,000 persons per square mile (exclusive of commercial and industrial areas).

City Planning (Transportation Planning)–Prescription of space uses by a legal authority to prevent their conflicting or to lead them to a desired end.

Comment–City planning may seek to meet a politically determined goal or may simply seek to harmonize the different requirements of residential, commercial, industrial, and institutional areas.

Community–A group of persons with a shared intention.

Comment–Because of modern means of communication and transport, a community often does not coincide with a definite land area (e.g., the community of sailors or of biophysicists). The community, therefore, can be independent of any determined land area but the communities known as the city, urban area, etc., do refer to a particular land area, and these terms are used with this understanding throughout this work.

Conurbation–A multi-core urbanized area.

Criteria–At least two central business districts 10-15 miles apart, with roughly equal total sales volume (less than a 10% difference).

Comment–In its strict connotation, conurbation refers to the growing together of two cities or more in such fashion that no one city comes to dominate the others. This is a common phenomenon in Europe (e.g., in North Holland, the Ruhr, French Riviera), but in the United States it exists only in the case of St. Paul-Minneapolis, and Dallas-Fort Worth. Tampa-St. Petersburg and Los Angeles-Long Beach are ambiguous cases. The term, "conurbation," however, is often used in much broader senses to designate any amalgamation of cities, large urbanized areas, and even any urban place whatsoever.

Core–That part of the metropolitan area which contains the central business district and which was constructed according to the technologies prevalent up to the Nineteen-forties (particularly the transportation technologies). The built-up areas that are now the cores of metropolitan areas in the United States were for the most part constructed when the trolley was the principal means of intra-urban transportation.

Criteria–The 1940 political boundaries of the city containing the largest central business district of a metropolitan area.

County–The primary political division of the states and a statistical unit for the reporting of data by areas. Most data are available on the basis of this unit.

Criteria–In most cases, counties are the actual political counties or parishes in a state. In a few cases, where there are other primary political units besides the county or parish (largely in New England) the data are tabulated by "county equivalent." There are 3,074 counties and 62 county equivalents. Lately, county boundaries have rarely been changed, unlike the boundaries of other political units, such as cities, towns, townships, precincts, and wards, and thus data on a county basis are generally comparable over time.

Enumerator Districts—The area unit for reporting the results of census-taking. Other areas for which data are available, such as urban places, counties, census tracts, etc., are aggregates of enumerator districts.

Criteria—In general, the 240,000 enumeration districts contain no more than 1,500 inhabitants and may not cross the boundaries of the following types of areas for which data are published: Counties; minor civil divisions (townships and similar areas); places, urban or rural, incorporated or unincorporated; congressional districts; wards and other subdivisions of cities (e.g., assembly districts); census tracts; areas annexed to cities having 2,500 or more inhabitants in 1950; prospective urbanized areas and unincorporated places.

Exurbs (or Fringe)—Places separated from the city by rural land but dependent on it for trade and employment.

Criteria—The best approximation to exurbs can be obtained by subtracting the urbanized area from the SMSA or SCA that contains them. However, it must be emphasized that no really clear criteria of the exurbs can be found and that it is useless to search for one, for the exurbs or fringe is where the city melts into the countryside.

Housing Unit—Separate living quarters consisting of one or more rooms, and occupied by one or more persons, located in houses or trailers.

Criteria—(1) Separate cooking equipment or (2) Direct access from outside or a common hall.

Comment—Excluded are group quarters such as institutions, barracks, etc.

Interstitial Growth—Urban growth in population achieved by crowding the population more closely together.

Criteria—Increased population in the same area, usually accompanied by rapidly rising land values.

Comment—This type of growth is characteristic of cities only and results from the increased value of settling in a specific place or using a specific space. At first, land is only valued for its use as a site for building, and its value depends on its suitability to the type and style of building prevalent at the time. Then the unused sites become valuable and building and human activities adapt themselves to the available sites. This last process is interstitial growth, different from horizontal and vertical growth.

Land Area—Any portion of the surface of the earth not covered by water.

Comment—It is important to keep distinct the two concepts of space and land area. Horizontal growth is very often the principal means by which a city grows, but vertical growth is on some occasions very important as well.

Metropolitan Area—The city and its fringe.

Criteria—The same as for an SMSA (see below), but with a minimum population of 250,000.

Neighborhood—A compact area bounded by natural or man-made physical barriers in which the inhabitants are familiar with each other.

Criteria—(1) The population served by an elementary school district; (2) population ranges: 2,000-8,000; average: 5,000; (3) area range: 50 to 250 acres; (4) census tracts in "tracted" areas, i.e., a relatively homogeneous population of *about 4,000* bounded by physical and man-made boundaries; (5) minimum of 500 dwelling units for a neighborhood to maintain itself.

Rapid Transit—A collective means of transportation with its own right of way that transports large numbers of passengers at high speeds.

Criteria—Trains with a capacity of about 1,000 passengers each, speeds of about 30 m.p.h., and time lags between trains of 1½ to 5 minutes during rush hours.

Comment—Rapid transit is distinguished from suburban or commuter railroads. What differentiates them is the time lag between trains. Suburban railroads have time lags of 10 to 60 minutes.

Standard Metropolitan Statistical Area—A county or group of counties containing at least one city (or twin cities) having 50,000 inhabitants or more plus adjacent counties that are economically and socially integrated with the core of the central city.

Criteria—Samples of commuting patterns are taken to see whether counties are "economically and socially" integrated into the metropolitan area. In addition, there is the requirement of a population density of 500 persons per square mile for at least 50% of the population of the county.

Suburb(s)–Urbanized area contiguous to the core of the city.

Criteria–Best approximation of suburbs is obtained by subtracting the 1940 boundaries of the core government from the urbanized area (assuming that the suburbs are mainly a postwar phenomenon). This is feasible in the case of 22 SMSA's, the boundaries of whose core cities remained nearly the same between 1940 and 1960.

Urban Place–A grouping of housing units with a minimum population of 2,500 and the adjacent land used for commercial and industrial purposes.

Criteria–At least one house per acre exclusive of industrial and commercial land.

Urbanized Area–See **City**

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